

FULGOROIDEA FROM SOUTHERN CHILE
(HEMIPTERA)



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FULGOROIDEA FROM SOUTHERN CHILE (HEMIPTERA)

By R. G. FENNAH

SYNOPSIS

This report is concerned primarily with a collection of Fulgoroidea made by members of the Royal Society Expedition to southern Chile (1958-1959), but the study has necessitated a revision of virtually the known Fulgoroid fauna of the region, some thirty-two species. Three genera and ten species are described as new. The fauna is found to comprise species with neotropical or holarctic affinities, together with some isolated taxa peculiar to southern Chile.

AMONG the insects collected by the Royal Society Expedition to southern Chile (1958-1959) were series in which four of the nineteen families of the Fulgoroidea were represented. In order to identify the species concerned, it was found necessary to revise the known Fulgoroid fauna of this area, and the opportunity has been taken of discussing material of little-known species from Valdivia and southern Argentina taken at different times by other collectors.

The writer's warmest thanks are tendered to Dr. G. Kuschel and Dr. M. W. Holdgate, both members of the Expedition, for the opportunity of examining their valuable and informative collections; to Mr. J. P. Doncaster, Keeper of the Department of Entomology, for the privilege of studying material in the accessions of the British Museum (Nat. Hist.), and also to Dr. A. Villiers for the loan of specimens from the Muséum National d'Histoire Naturelle, Paris.

The area of Chile with which this study is mainly concerned lies south of the 40th Parallel: its main faunistic and vegetational features have been discussed by Kuschel (1960) and the detailed features of the areas sampled by the Royal Society Expedition have been described by Holdgate (1960). Of the Chilean Fulgoroid material studied, that brought back by the Expedition was obtained in different vegetational zones, but the remainder came mostly from the Valdivian forest north of Puerto Montt.

The total assemblage of specimens included representatives of six families, Cixiidae, Delphacidae, Achilidae, Derbidae, Dictyopharidae and Issidae, but those of the last two were not found south of Ancud. Both in number of families and in number of species the Fulgoroid fauna shows impoverishment in the more southerly areas. The families Cixiidae, Delphacidae and Achilidae occur in all parts of the world, and are the last Fulgoroidea to disappear wherever the cool temperate zone reaches its colder extreme. Members of the first family are primarily root-feeders in the nymphal stages; of the Delphacidae, members of the tribe Delphacini feed mainly on grasses, sedges and rushes; those of the tribe Alohini usually feed on herbs and shrubs, and those of the subfamily Asiracinae often, if not invariably, feed on shrubs or woody herbs; the Achilidae, as far as is known, live in their immature stages under decaying bark; the Derbidae, which in the northern hemisphere do not penetrate so far north as the other families, regularly feed on fungus as nymphs and on fungus or phanero-

gams as adults. All these families attain their greatest development, in genera and species, in the warm temperate and tropical parts of the world.

Even in so small a collection as that discussed below, it is possible to recognize three features regarding faunal relationships; firstly, that a moderate number of the Valdivian genera, and a few of the Magellanic, have representatives in the warmer parts of America; next, that some genera in this fauna are not only restricted to the southern part of South America, but morphologically stand far apart from other genera in their family; and finally, that of these Chilean fulgoroid genera only one can be recognized as being related to a genus in New Zealand, Tasmania or Australia.

The Valdivian genera with neotropical representatives include the cixiids *Pintalia* and *Mnemosyne*, the Achilids *Catonia* and the unexpected *Rhotala* (elsewhere known from Panama, the Philippine Islands and Australasia), and the Issid *Nubithia*. The Issids *Sarnus* and *Plagiopsis* seem close to *Thionia* and *Aphelonema*, respectively: the latter genus has not been recorded in Chile. The Magellanic genera represented elsewhere include *Catonia* and the Delphacid *Nothodelphax*. The latter is found in Tristan da Cunha, Gough Id., Falkland Is., Mexico, eastern U.S.A., southern Canada and northern Europe. The genus is compact; most of the known species occur in the U.S.A., and the Chilean representative does not stand apart from the remainder in degree of morphological difference.

The genera peculiar to the region include four in the Dictyopharidae, *Chondrodera*, *Sicoris*, *Sicorisia*, and one described below as new, the Derbid *Goneokarella*, the Delphacids *Idiosystatus*, *Idiosemus*, *Calbodus*, and a Cixiid genus described below as new.

Goneokarella has a near relative in *Phrygia*, from Rio de Janeiro, but these two occupy a very sequestered position in the Derbidae. They have no Maorian relatives. The only Derbid in New Zealand is the very different *Eocenchrea maorica* Muir, and this finds its nearest relatives in species in Australia and New Caledonia.

Similarly, New Zealand has only one representative of the Achilidae, this being *Agandecca annectens* B. White. The genus is found only in New Zealand, and so far no other has been reported from Australia, Australasia or south America that can be confidently regarded as of the same stock.

In the Delphacidae the principal interest lies in the Asiracinae. There are no representatives of the subfamily in America north of Mexico; in Central and South America there are seven genera, all far removed from one another. Two of them, *Idiosemus* and *Idiosystatus*, are restricted to the southernmost part of the continent, and occur in Chile. One of the remainder, *Ugyops* (s.l.) is well represented in the Brazilian subregion and in the Greater Antilles, and, outside America, occurs in the Mascarene Islands, the seaboard of S.E. Asia from Narkondam Id. to the Philippines, virtually all the Western Pacific Islands, Australia and in the North Island of New Zealand. But *Ugyops* does not occur in Hawaii, nor in the Marquesas Islands or any islands eastward of them, nor in Chile.

Apart from *Pintalia* and *Mnemosyne*, the Cixiid genera of southern Chile, as so far known, are endemic, and appear to have a broad affinity with Pintaliine genera. In New Zealand there are endemic genera of Cixiidae, and with only two exceptions

(*Tiriteana* and *Koroana*) they are unquestionably of Oliarine affinity. The only species in New Zealand that appear to belong to the Pintaliini include those of *Koroana* and three species currently ascribed to *Cixius*, namely, *C. aspilus* Wlk., *C. kermadecensis* Myers, and *C. punctimargo* Wlk. On present evidence, however, none of these can be accepted with complete assurance as congeneric with any species from Chile. The cosmopolitan *Oliarus* occurs in New Zealand, but has not been reported any nearer Chile than Buenos Aires. It is, however, not unlikely that its apparent absence from Chile is attributable to insufficient collecting.

The type specimens of new species described below are in the collection of the British Museum (Nat. Hist.). All bibliographic citations not listed in the references at the end of this report are given according to the usage in "A Bibliography of the Homoptera (Auchenorrhycha)" by Z. P. Metcalf (N.C. State College of Agriculture and Engineering, University of North Carolina, 1942).

Family CIXIIDAE

MNEMOSYNE Stål

Mnemosyne Stål, 1866a : 150. Haplotype, *Mnemosyne cubana* Stål, 1866a : 391.

Mnemosyne cixioides (Spinola) **comb. n.**

Achilus cixioides Spinola, 1852a : 246. *Atlas Zoologico, Hemipteros*, pl. 3, fig. 2, 2a-d.

PINTALIA Stål

Pintalia Stål, 1862e : 4. Logotype, *Pintalia lateralis* Stål, 1862e : 4.

Pintalia fasciolaris Blanchard **comb. n.**

(Text-figs. 1-8)

Cixius fasciolaris Blanchard, 1852a : 251.

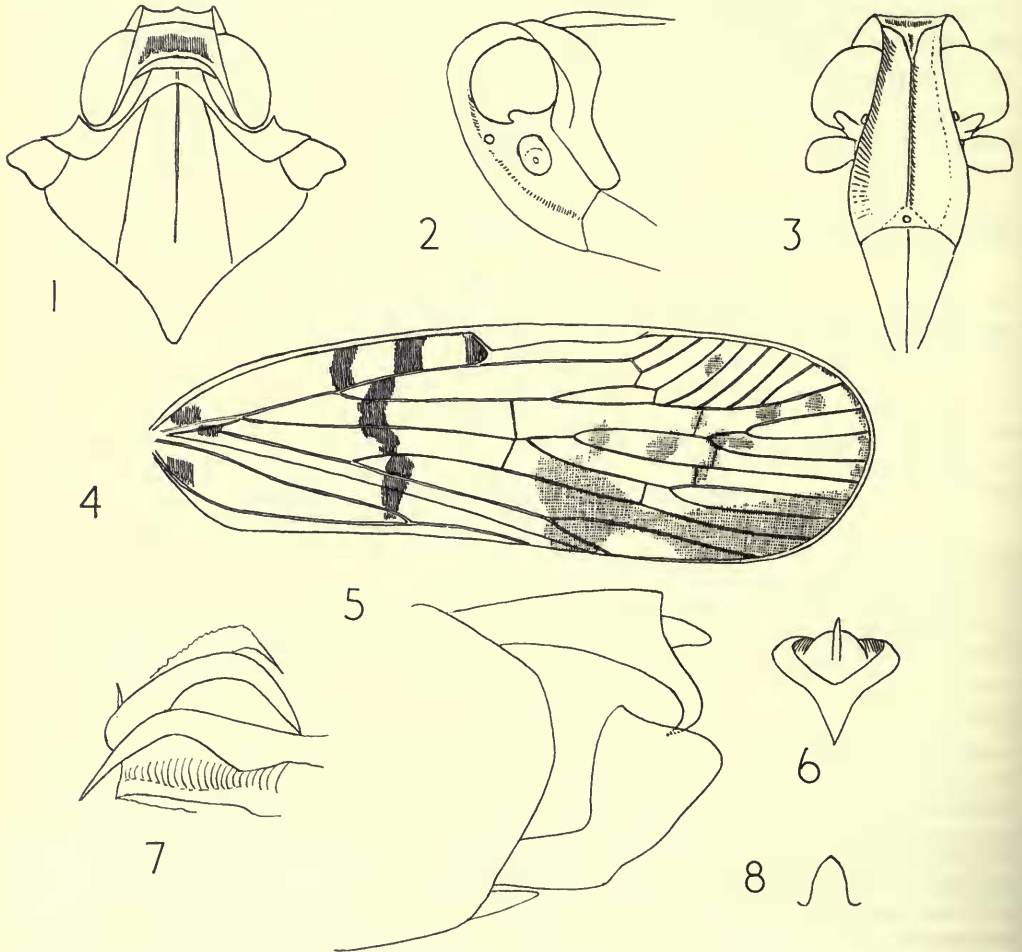
The figures are of the type in the Paris Museum. No other specimens have been seen by the writer. The only locality mentioned by Blanchard is Coquimbo.

NOTOCIXIUS **gen. n.**

Type-species, *Cixius fulvicollis* Blanchard.

Vertex with a transverse carina apart from apical carina, not medially carinate between this carina and base, the transverse carina not, or at most obscurely, connected with anterior margin ; median carina of frons distinct, often shortly forked at base ; clypeus carinate medially and laterally ; lateral ocelli distinct, median ocellus usually so, eyes round, antennae with first segment very short, second segment shortly barrel-shaped. Pronotum short, anterior margin of disc truncate, posterior margin deeply excavate, lateral carinae of disc curving laterad behind eyes, a weak carina laterally between this carina and tegula, tegulae subcarinate. Post-tibiae unarmed or with one or two very small spines laterally, six spines apically in two groups of three, basal metatarsal segment with eight small teeth, the middle six each with a short narrow scale, second metatarsal segment with seven teeth, the middle five each with a short scale. A vertical obcordate plate above ovipositor.

This genus differs from *Cixius* in the tegmina being carried more steeply, in the frontoclypeal suture being almost transverse, and in the pregenital sternite of the female being transverse and relatively narrow, not large and triangular. It is rather like *Koroana*, but differs not only in the less arcuate frontoclypeal suture, but also in the anterolaterad inflection of the lateral carinae of the frons, in the tegmina being carried more steeply, and in the ovipositor being curved, not straight. *Koroana* is characterized by stout spines laterally on the post-tibiae and this may be associated with the relatively coarse build of its member species; such spines do not occur in *Notocixius*, in which, if present at all, they are minute.



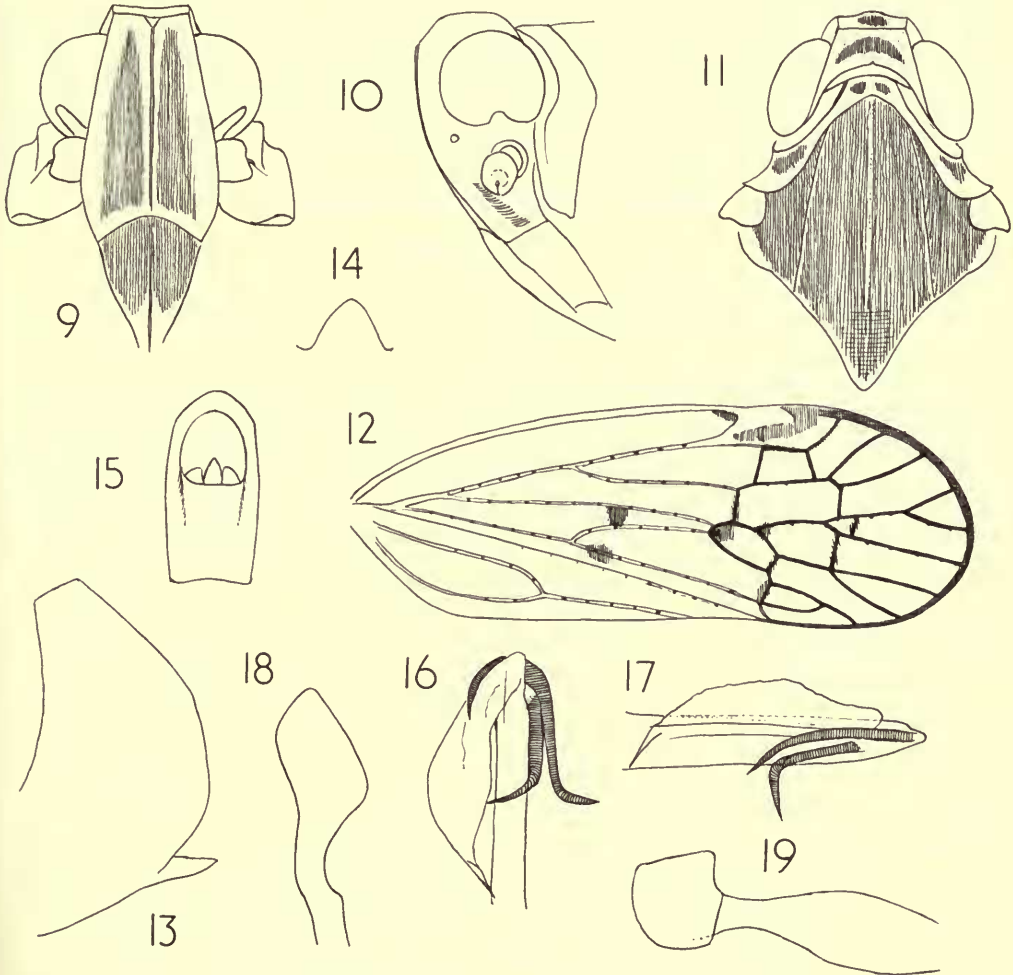
FIGS. 1-8. *Pintalia fasciolaris* (Blanchard). 1, Vertex, pronotum and mesonotum; 2, head in profile; 3, frons and clypeus; 4, tegmen; 5, anal segment, pygofer and left genital style, lateral view; 6, anal segment of male, posterior view; 7, aedeagus (free hand sketch from undissected genitalia); 8, medioventral process of pygofer.

Notocixius fulvicollis (Blanchard) comb. n.

(Text-figs. 9-19)

Cixius fulvicollis Blanchard, 1852a : 254.CHILE : Llanquihue, Peulla, 1 ♂, 9.iii.1959 (*J. F. G. Clarke*).

The figures are based on the above specimen, which has been compared with the type in the Paris Museum. The species is most easily recognizable by the markings on the tegmina. The type locality is Carelmapu.



FIGS. 9-19. *Notocixius fulvicollis* (Blanchard). 9, Frons and clypeus ; 10, head in profile ; 11, vertex, pronotum and mesonotum ; 12, tegmen ; 13, pygofer ; 14, medioventral process of pygofer ; 15, anal segment of male ; 16, aedeagus, dorsal view ; 17, aedeagus, left side ; 18, genital style, posterior view ; 19, genital style, lateral view.

***Notocixius pallens* (Blanchard) comb. n.**

(Text-figs. 20-26)

Cixius pallens Blanchard, 1852a : 256.

The figures are of Blanchard's type. The type locality is given as Santiago.

***Notocixius adpersus* (Blanchard) comb. n.**

(Text-figs. 27-31)

Cixius adpersus Blanchard, 1852a : 257.CHILE : Santiago, Cuesta Zapata, 1♂, 2♀, 30.xi.1947 (*G. Kuschel*).

With the exception of Text-fig. 31, the figures are of the male of this series, which has been compared with the type. The typical locality is Sotaqui in Coquimbo. This and *N. pallens* are readily recognizable by the relatively elongate form of the posterior compartment of the vertex.

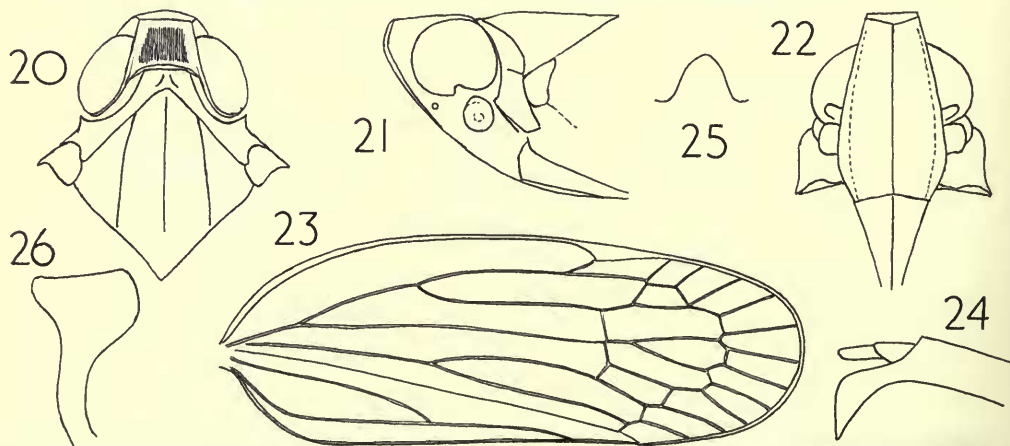
***Notocixius helvolus* (Spinola) comb. n.**

(Text-figs. 32-39)

Cixius helvolus Spinola, 1852a : 255.

CHILE : Llanquihue, Frutillar, 1♂, 1♀, 15.ii.1956 ; Volcan Calbuco, 200 m., 4♂, 1♀, 22.ii.1956 (*G. Kuschel*).

The males of this series are of a uniform clear yellow, with only a dilute smoky spot just distad of the apex of the clavus, but in one of the females the basal half of the tegmina is abruptly dark castaneous. This species broadly resembles the New Zealand *Cixius aspilus* Wlk. and *C. kermadecensis* Myers, but in these the clypeus is abnormally inflated and the transverse carina of the vertex is markedly convex, and the ovipositor of *C. kermadecensis* has a relatively small ovate ceriferous area.

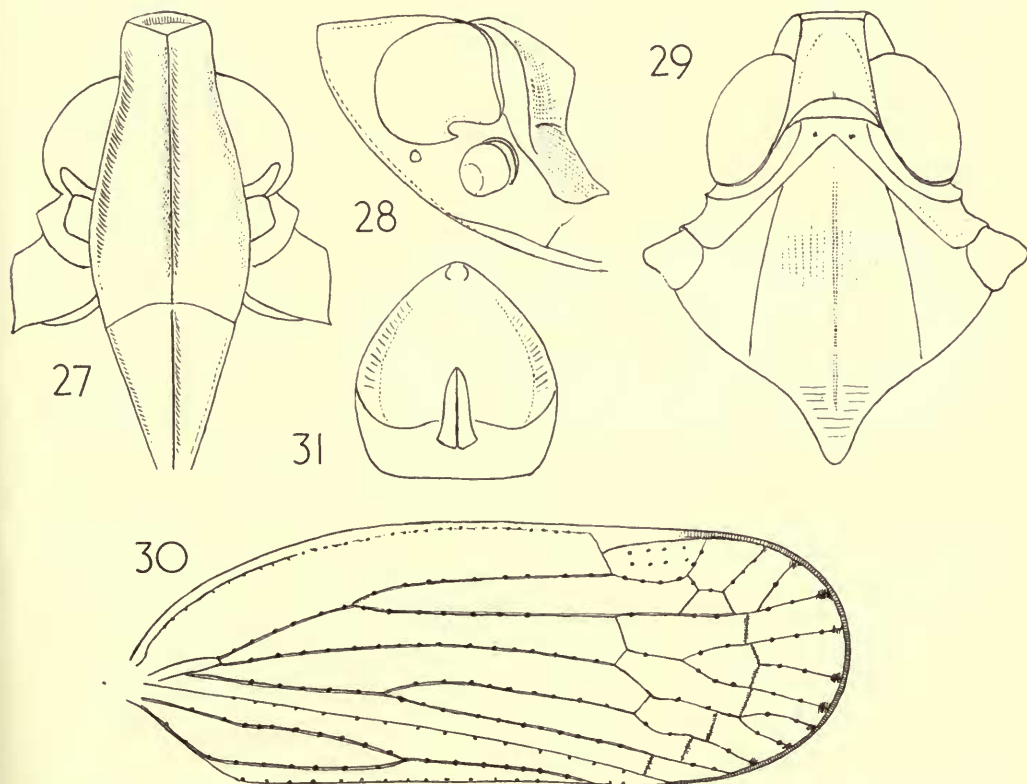


FIGS. 20-26. *Notocixius pallens* (Blanchard). 20, Vertex, pronotum and mesonotum; 21, head in profile; 22, frons and clypeus; 23, tegmen; 24, anal segment of male, right side; 25, medioventral process of pygofer; 26, genital style.

Notocixius tenebrosus sp. n.

(Text-figs. 40-47)

♂. Vertex broader at anterior margin than long in middle line (about 4 : 1), a little wider at base than at apex, anterior margin truncate, lateral margins straight, posterior margin broadly excavate, disc rather deeply hollowed, obscurely medially carinate at extreme base; base of frons visible in dorsal view, frons longer than broad (nearly 1.4 : 1), basal margin straight, lateral margins diverging to level of antennae, thence incurved to frontoclypeal suture, which is slightly concave, disc carinate medially and at lateral margins, depressed between carina and with two or three obscure, ridge-like transverse elevations, median carina forked at one third from base, each arm meeting basal margin midway between middle line and lateral margin, median ocellus present; postclypeal portion of clypeus shorter than frons (about 1 : 2.8), carinate medially and laterally, anteclypeus about as long as postclypeus, rostrum fully attaining post trochanters, apical segment as long as subapical; lateral ocelli distinct; eyes round, first antennal segment very short, concealed, second segment globose. Pronotum narrow with anterior margin of disc transverse, posterior margin obtusely angulately excavate, disc feebly medially carinate, strongly depressed, lateral discal carinae following hind margin of eyes, a carina on each side between eye and tegula, outer angles of lateral lobes slightly acute; mesonotum with disc distinctly tricarinate, with traces of a pair of intermediate carinae; profemora and mesofemora rather



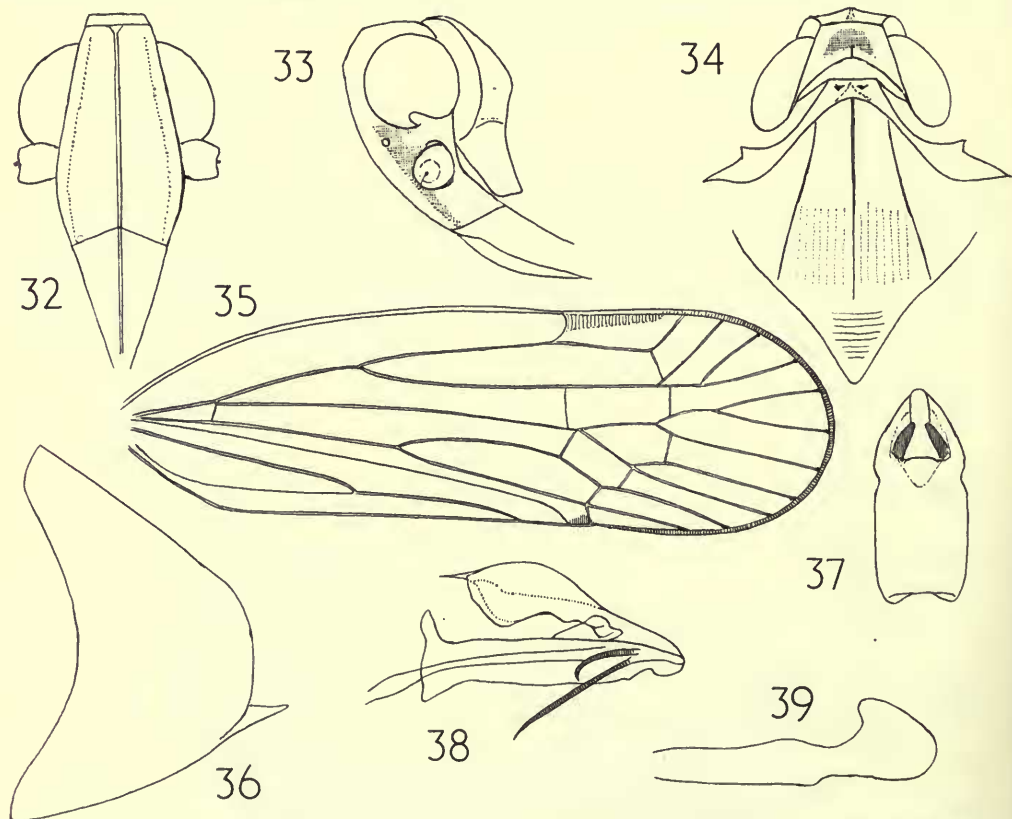
FIGS. 27-31. *Notocixius adpersus* (Blanchard). 27, Frons and clypeus; 28, head in profile; 29, vertex, pronotum and mesonotum; 30, tegmen; 31, female genitalia, posterior view.

compressed; post-tibiae laterally unarmed, apically with five teeth, basal post-tarsal segment apically with two stout and five small spines, second segment similarly adorned.

Piceous; lateral margins of vertex, pronotum, tegulae, post-tibiae distally and post-tarsi, ferruginous or castaneous. Tegmina hyaline, veins and margin castaneous; some suffusion in basal half, an ill-defined broad oblique fascia between stigma and apical part of clavus, and apical areoles except submarginally, castaneous. Wings hyaline, with dark castaneous veins.

Anal segment of male moderately long, in side view with central margin very shallowly concave, dorsal margin strongly decurved distad of anal foramen. Pygofer short dorsally, moderately long ventrally, in lateral view with posterior margin sinuately convex, laterodorsal angles not distinct, medioventral process triangular, prominent. Aedeagus tubular, a pair of long, shallowly curved spinose processes arising on each side at apex, directed ventrocephalad; a shorter spinose process arising on left near apex, directed dorsocephalad and curving to right; a slender long spinose process arising ventrally near apex directed cephalad, flagellum in repose reflected cephalad, comprising a narrow sinuate sclerotized limb in basal half, abruptly expanding into a broad granulate membrane in distal half; a broad sclerotized plate arising ventrally on right of flagellum at base, descending ventrocephalad to left in basal half of aedeagus. Genital styles each narrow, L-shaped, with dorsal margin in basal half produced dorsad in a shallow setiferous eminence.

♂: length, 2.9 mm.; tegmen, 3.5 mm.



FIGS. 32-39. *Notocixius helvolus* (Spinola). 32, Frons and clypeus; 33, head in profile; 34, vertex, pronotum and mesonotum; 35, tegmen; 36, pygofer; 37, anal segment of male, dorsal view; 38, aedeagus, left side; 39, genital style.

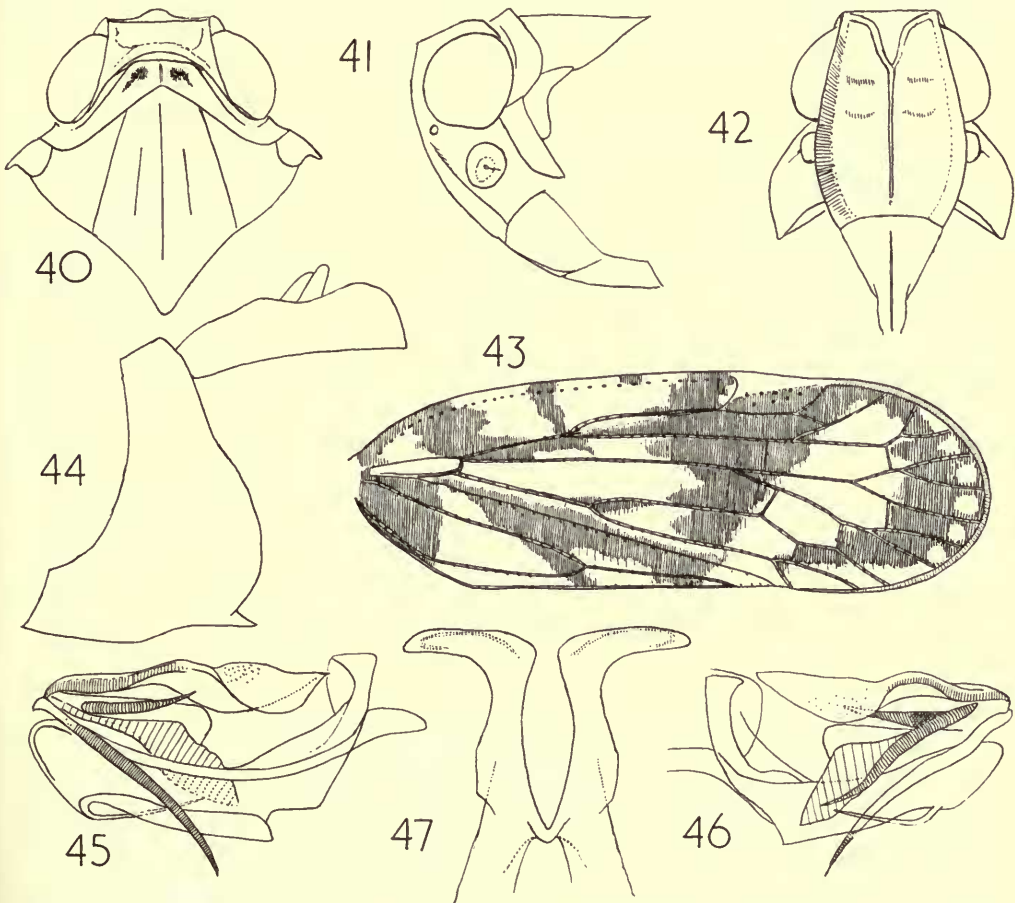
Holotype ♂. CHILE: Llanquihue Prov., Casa Panque, 4-10.xii.1926 (*F. & M. Edwards*), B.M. 1927-63.

This species is distinguished by the wide basal fork of the median frontal carina, the almost quinquecarinate mesonotum, the shape of the male genitalia, and the colour pattern of the tegmina.

Notocixius chepuanus sp. n.

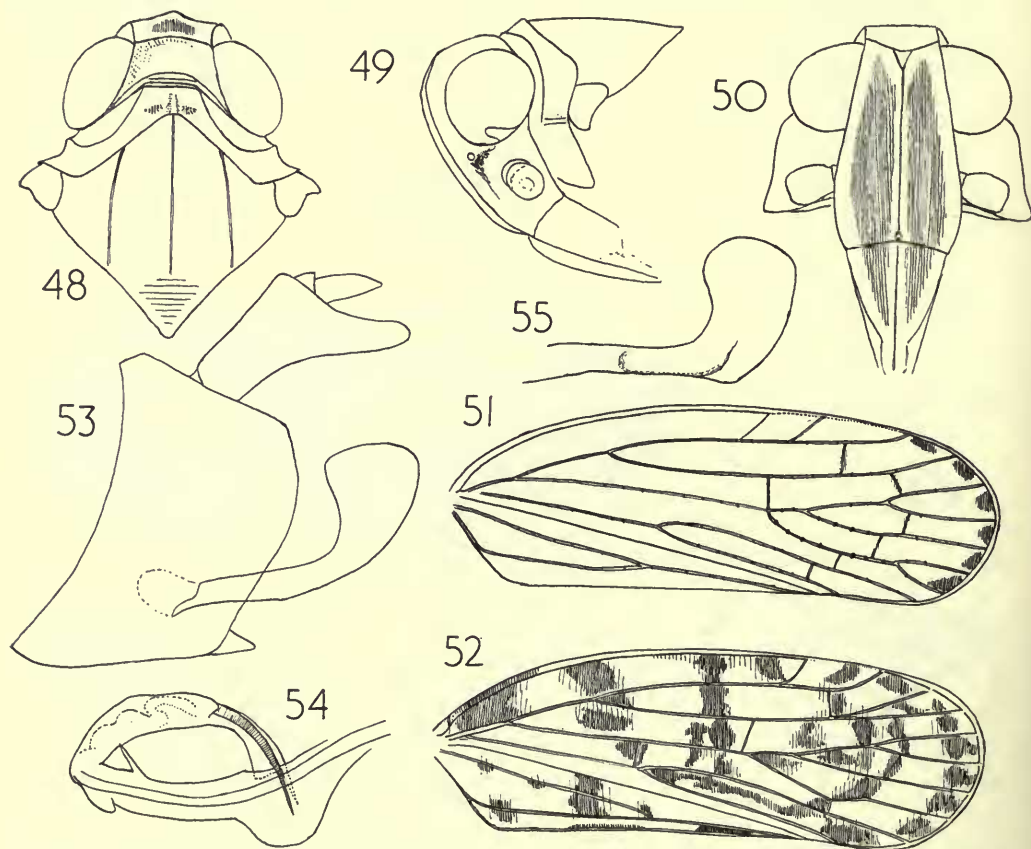
(Text-figs. 48-55)

♂ ♀. Head with eyes narrower than pronotum. Vertex between basal angles wider than long in middle line (1.6 : 1), anterior compartment strongly declivous, anterior margin angularly convex, lateral margins straight or weakly concave, posterior margin rather deeply roundly excavate, posterior compartment not as long as anterior, anterior compartment medially



FIGS. 40-47. *Notocixius tenebrosus* sp. n. 40, Vertex, pronotum and mesonotum; 41, head and thorax, lateral view; 42, frons and clypeus; 43, tegmen; 44, pygofer and anal segment, lateral view; 45, aedeagus, right side; 46, aedeagus, left side; 47, genital styles.

ecarinate, largely visible in anterior view; frons longer in middle line than broad (1.3 : 1), basal margin shallowly angulately excavate, lateral margins diverging distad to below level of antennae, then moderately incurved to frontoclypeal suture, disc very shallowly depressed on each side of middle line, median carina distinct, moderately widely forked near base, median ocellus distinct at apex; clypeus with basal margin shallowly convex, distinctly convex transversely, shallowly convex in profile, strongly carinate medially and laterally, median carina subfoliate; rostrum distinctly surpassing post-trochanters, subapical segment slightly longer than apical; antennae with basal segment very short, ring-like, second segment shortly cylindrical, wider at apex than at base, lateral ocelli distinct, eyes rounded. Pronotum short, anterior margin transverse, posterior margin rather strongly concave, disc medially carinate, lateral carinae curving laterad behind eyes; mesonotum about as long as broad, with dorsal margin in profile sinuate, disc tricarinate; post-tibiae laterally with a minute spine at base and one or two small spines at middle and apically with six spines, basal metatarsal segment with six small teeth, second segment with seven teeth. Tegmina longer than broad (3 : 1), with *Sc + R* fork at about one-third from base, *Cu*₁ fork distinctly basad of middle of tegmen, *R-M* cross-vein distinct, *M-Cu* cross-vein obsolete, cross-vein between claval suture and anterior claval vein sometimes obscure, not in same line as *R-M* cross-vein.



FIGS. 48-55. *Notocixius chepuanus* sp. n. 48, Vertex, pronotum and mesonotum; 49, head and thorax, lateral view; 50, frons and clypeus; 51, tegmen (male); 52, tegmen (female); 53, male genitalia, lateral view; 54, aedeagus, right side; 55, genital style.

Dark castaneous (male) or ferruginous (female); frons, clypeus and mesonotum almost piceous, lateral margins of frons, sides of vertex, labrum, carinae and hind margin of pronotum, femora and tibiae apically, and post-tarsi, stramineous or pale testaceous. Tegmina of male milky hyaline with a faint yellowish brown suffusion, veins almost concolorous, interruptedly yellowish brown on corium, distinctly brown in membrane, margin fuscous, pale at apices of veins, subapical areoles distally dilute ferruginous fuscous. Wings milky-hyaline, with veins fuscous.

♂. Anal segment of male moderately long, slightly expanding to middle, in side view with ventral margin concave in basal half, convex in distal half, apical margin viewed from above weakly convex, anal style moderately broadly cylindrical, not quite attaining apical margin. Pygofer rather long, in side view broadly convex, medioventral process about as broad as long, triangular, apically rounded. Aedeagus long, relatively slender, shallowly curved upward distad, a rather short slender spinose process dorsally, directed dorso-caudad, a quarter of length of aedeagus from apex, a broad median subquadrate lobe ventrally in basal half; flagellum rather narrowly tubular, of subequal width throughout, a long slender spinose process arising at middle on right, curved cephalad then ventrad, and a short slender spine at apex of flagellum. Genital styles rather long, in profile rather narrow and parallel sided in basal half, expanded into a subrectangulate lobe distally, with apical margin rounded-truncate.

♂: length, 3.3 mm.; tegmen, 4.0 mm.

♀: length, 4.0 mm.; tegmen, 4.0 mm.

Holotype ♀. CHILE: Chepu, 42° S. 16. x. 58 (*G. Kuschel*).

Paratypes: 1 ♀, same data; Aisen, Rio Murta, 1 ♀, 25. i. 1956 (*G. Kuschel*).

This species can be distinguished from all others in Chile and Argentina, except *P. fasciolaris* and perhaps *N. fulvicollis*, by the heavily mottled tegmina. From *P. fasciolaris* it can be separated by the anterior margin of the vertex being parallel to the transverse carina of the vertex, whereas it is more acutely angulate than the transverse carina in *P. fasciolaris*. In the latter species, the lateral margins of the frons curve in to the frontoclypeal suture more gently than in *N. chepuanus*, and accordingly the greatest width of the frons is a little more basal. The intercarinal areas of the frons of *P. fasciolaris* often show five darker spots in each, and there are faint traces of pitting in approximately corresponding positions. The intercarinal areas of the frons in *N. chepuanus* are smooth and uniformly coloured.

From *N. fulvicollis* the present species can be separated by the pattern of markings on the tegmina. The two species stand well apart in the form of the male genitalia.

Notocixius magellanicus sp. n.

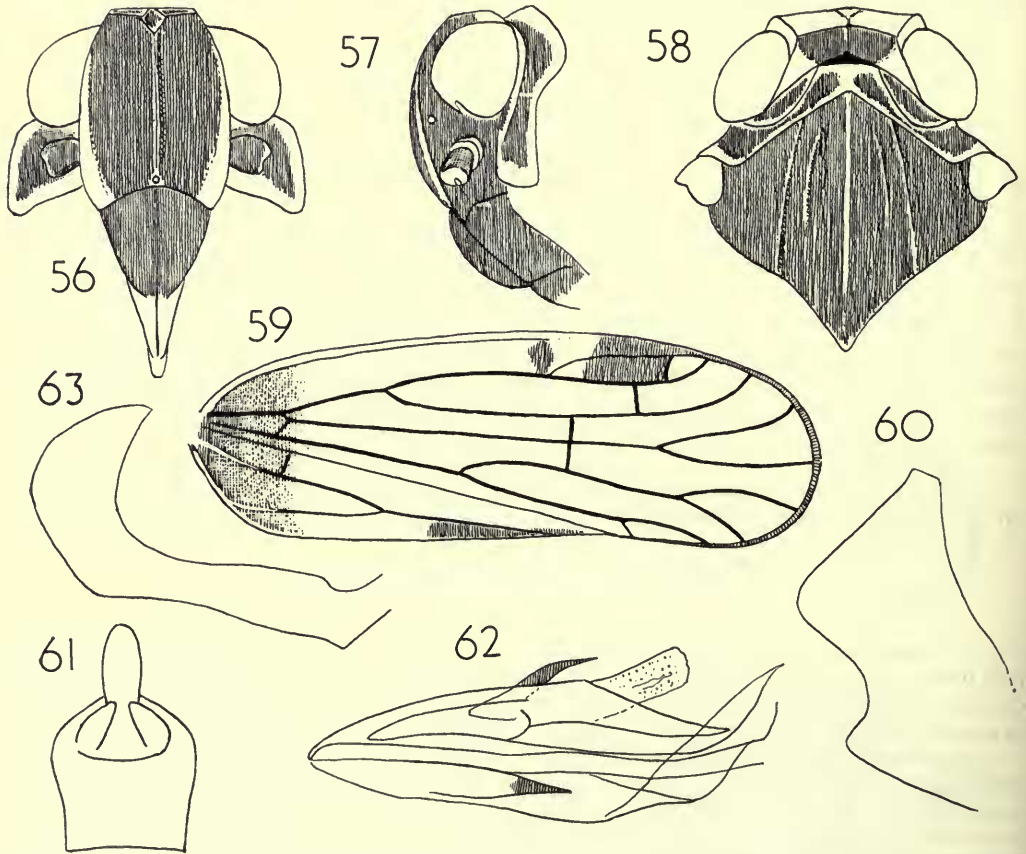
(Text-figs. 56-63)

♂ ♀. Head with eyes narrower than pronotum. Vertex between basal angles wider than long in middle (2.4 : 1), declivous, anterior margin angulately convex, lateral margins markedly concave, posterior margin obtusely angulately excavate, posterior compartment of vertex as long as anterior compartment, the latter divided by a median carina, frons longer than broad (about 1.1 : 1), basal margin transverse, lateral margins diverging distad for most of their length, then strongly incurved to frontoclypeal suture, disc shallowly depressed on each side of middle line, median carina distinct, very widely forked near base, median ocellus distinct at apex; clypeus with basal margin shallowly convex, disc rather strongly convex transversely and in profile, finely but strongly carinate medially and laterally; rostrum attaining post-trochanters, apical segment about as long as subapical; antennae with basal segment very short, ring-like, second segment globose, lateral ocelli distinct, eyes rounded. Pronotum short, anterior margin transverse, posterior margin rather strongly concave, disc medially carinate, lateral carinae

curving laterad behind eyes; mesonotum about as long as broad, with dorsal margin in profile sinuate, disc with three distinct longitudinal carinae and two intermediate carinae that vary in their distinctness; post-tibiae laterally unarmed, apically with six spines, basal metatarsal segment with five spines apically, second metatarsal with six. Tegmina with *Sc + R* fork at about one-third from base, *Cu₁* fork slightly basad of middle of tegmen, *R-M* and *M-Cu* cross-veins at same level, or nearly so, a cross-vein between claval suture and anterior claval vein.

Fuscous-piceous; lateral margins of frons, basal angles of vertex, labrum, second antennal segment ventrally, carinae and hind margin and lower margin of lateral lobes of pronotum, stramineous or pale yellow; all trochanters, postfemora at apex, tibiae distally, and basal two segments of post-tarsi, dilute fuscous or testaceous. Tegmina milky hyaline, a suffusion basally, stigma, a suffusion between common claval vein and posterior margin, dark fuscous; veins fuscous, posterior claval vein in part, and commissural margin from base to level of union of claval veins, sordid white. Wings hyaline, with fuscous veins.

♂. Anal segment of male distinctly short, in profile with ventral margin feebly concave, apical margin in dorsal view rounded-truncate, anal style moderately stout, cylindrical, much surpassing apical margin. Pygofer rather long, in side view posterior margin oblique, dorso-



FIGS. 56-63. *Notocixius magellanicus* sp. n. 56, Frons and clypeus; 57, head in profile; 58, vertex, pronotum and mesonotum; 59, tegmen; 60, pygofer, right side; 61, anal segment of male; 62, aedeagus, right side; 63, genital style.

lateral angles each distinctly produced caudad in a deeply convex setiferous lobe, medioventral process moderately large, triangular, distally rounded. Aedeagus slender, porrect caudad, a spinose process on right at apex, extending cephalad for half length of aedeagus, this process in side view expanding to distal third, then tapering to apex; flagellum submembranous, almost parallel-sided, apically very obliquely truncate, a blade-like process arising on left near base, directed dorsocephalad. Genital styles long, slender and sinuate in basal two thirds, each rather abruptly expanding in distal third into an acute rounded-triangulate lobe, with a vertical ridge on its inner face from apex to ventral margin of style.

♂: length, 3.6 mm.; tegmen, 4.6 mm.

♀: length, 4.0 mm.; tegmen, 5.1 mm.

Holotype ♂. CHILE: I. Wellington, Puerto Eden, 400 ft., 13.xii.58 (*G. Kuschel*) in B.M. (N.H.).

Paratypes: CHILE: I. Wellington, Puerto Eden, 25-350 ft., 82 ♂, 62 ♀, 28-30.xi.58., under *Nothofagus nitida* (*M. W. Holdgate, G. Kuschel*); Isle Piazza, Lecky Retreat, 25 ft., 14 ♂, 14 ♀, 26.xii.58, *Nothofagus* forest; Gamero, Pena. Munoz, 20-40 ft., 14 ♂, 8 ♀, 27.xii.58, *Nothofagus antarctica* (*M. W. Holdgate*); Aisen, Rio Murta, 1 ♀, 25.i.56 (*G. Kuschel*).

This species is distinguished by the relatively broad vertex, the proportions of the frons, the shape of each element of the male genitalia, and by the pallid lower margins of the lateral lobes of the pronotum.

Notocixius ophion sp. n.

(Text-figs. 64-73)

♂ ♀. Vertex about as broad at anterior margin as long in middle line, broader at level of middle of hind margin than long in middle line (not quite 1.4:1), anterior margin obtusely angulate, lateral margins shallowly concave, posterior margin broadly excavate, transverse carina feebly angulate, posterior compartment of disc rather deeply hollowed, finely medially carinate at extreme base; frons longer than broad (1.7:1), basal margin angulately excavate, lateral margins diverging to level of antennae, thence incurved to frontoclypeal suture, which is slightly concave, disc carinate medially and at lateral margins, depressed between carinae, median carina simple to base, median ocellus absent; postclypeal portion of clypeus shorter than frons (1:2.3), carinate medially and laterally, anteclypeus about as long as post-clypeus, rostrum slightly surpassing post-trochanters, apical segment about as long as subapical, lateral ocelli distinct, eyes round, first antennal segment very short, second segment in anterior view barrel-shaped. Pronotum narrow, with anterior margin of disc transverse, posterior margin obtusely angulately excavate, disc hollowed out on each side of middle line, lateral discal carinae following hind margin of eyes, a feeble oblique carina on each side between lateral discal carina and tegula, outer angles of lateral lobes in anterior view rectangular; mesonotum with disc tricarinate, with a very obscure indication of sublateral carinae, profemora and mesofemora rather compressed, post-tibiae laterally unarmed or with a single minute spine, apically with six teeth in two groups of three, basal metatarsal segment with two stout and six small even teeth apically, second segment with two stout and seven small teeth apically, some of the latter bearing a narrow scale.

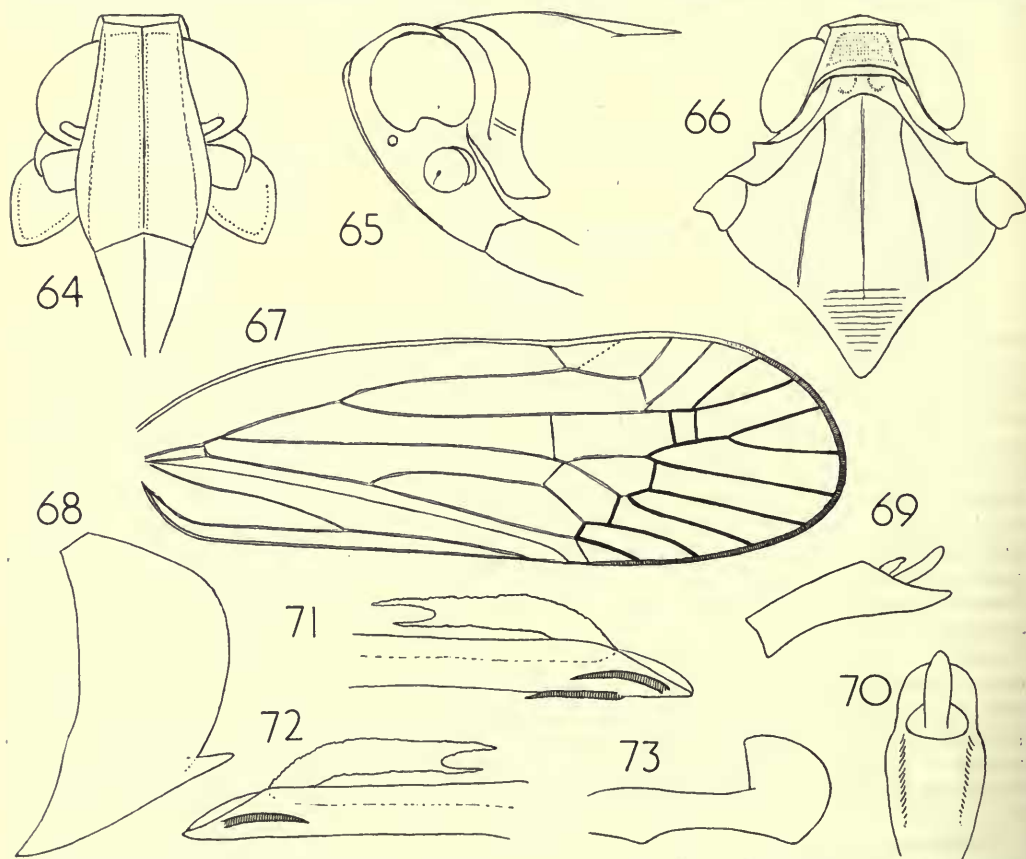
Castaneous; lateral carinae of frons and vertex, disc and posterior margin of pronotum, rostrum except at apex, pleura, postcoxae, post-trochanters, all tibiae and tarsi light testaceous or sordid stramineous. disc of mesonotum ferruginous, except anteriorly. Tegmina hyaline, membrane faintly infumed distad of nodal line, veins of corium concolous, distal line of transverse veinlets, and all veins distad of this, and apical margin, fuscous. Wings hyaline, with brown veins.

♂. Anal segment of male moderately long, in side view with ventral margin shallowly sinuate, dorsal margin declivous distad of anal foramen, apical margin in dorsal view broadly convex. Pygofer short dorsally, rather long ventrally, in lateral view with posterior margin strongly convex, laterodorsal angles not distinct, medioventral process triangular, prominent. Aedeagus tubular, porrect, a pair of moderately long spinose processes arising laterally at apex, directed cephalad; a spinose process, of approximately equal length, arising ventrally on left subapically, directed cephalad and curving weakly to right, flagellum rather narrowly tubular, reflected cephalad in repose. Genital styles moderately long, relatively straight and approximately parallel-sided in basal three-quarters, expanding in distal quarter; apical margin strongly convex, apical angle subrectangulate.

♂: length, 4.1 mm.; tegmen, 5.5 mm.

Holotype ♂. CHILE: Volcan Calbuco, 200 m., 22.ii.1956 (G. Kuschel).

This species is most easily recognizable by the tegminal marking. It is separable from *N. helvolus* by its dark body colour; from *N. fulvicollis* and *N. chepuanus* by the



FIGS. 64-73. *Notocixius ophion* sp. n. 64, Frons and clypeus; 65, head and pronotum lateral view; 66, vertex, pronotum and mesonotum; 67, tegmen; 68, pygofer, left side; 69, anal segment, left side; 70, anal segment, dorsal view; 71, aedeagus, left side; 72, aedeagus, right side; 73, genital style.

absence of fuscous spots on the corium; and from *N. pallens* and *N. adpersus* by the proportions of the posterior margin of the vertex.

CIXIOSOMA Berg

Cixiosoma Berg, 1879b : 185. Haplotype, *Cixiosoma platense* Berg.

Cixiosoma platense Berg

(Text-figs. 74-78)

Cixiosoma platense Berg, 1879b : 186.

ARGENTINA : Terr. Rio Negro, Viedma, 1 ♀, 23.x.1926 (*F. & M. Edwards*), B.M. 1927-63 ;

URUGUAY : Maldonado, 1 ♀ (*C. Darwin*), B.M. 1885-119.

Cixiosoma bonaerense Berg

(Text-figs. 79-87)

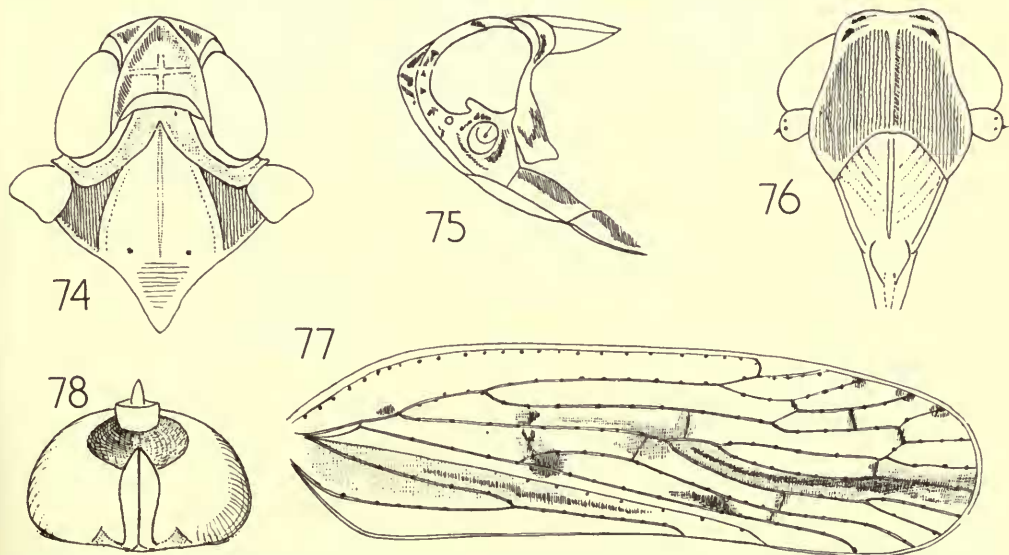
Cixiosoma bonaerense Berg, 1883 : 188.

ARGENTINA : Chaco, Roque Saenz Pena, 3 ♂, 5 ♀, 1932 (*K. J. Hayward*), B.M. 1933-58 ; Prov. Buenos Aires, 1 ♂, 2 ♀, 9.x.1899 (*S. Venturi*).

Cixiosoma caliginosum sp. n.

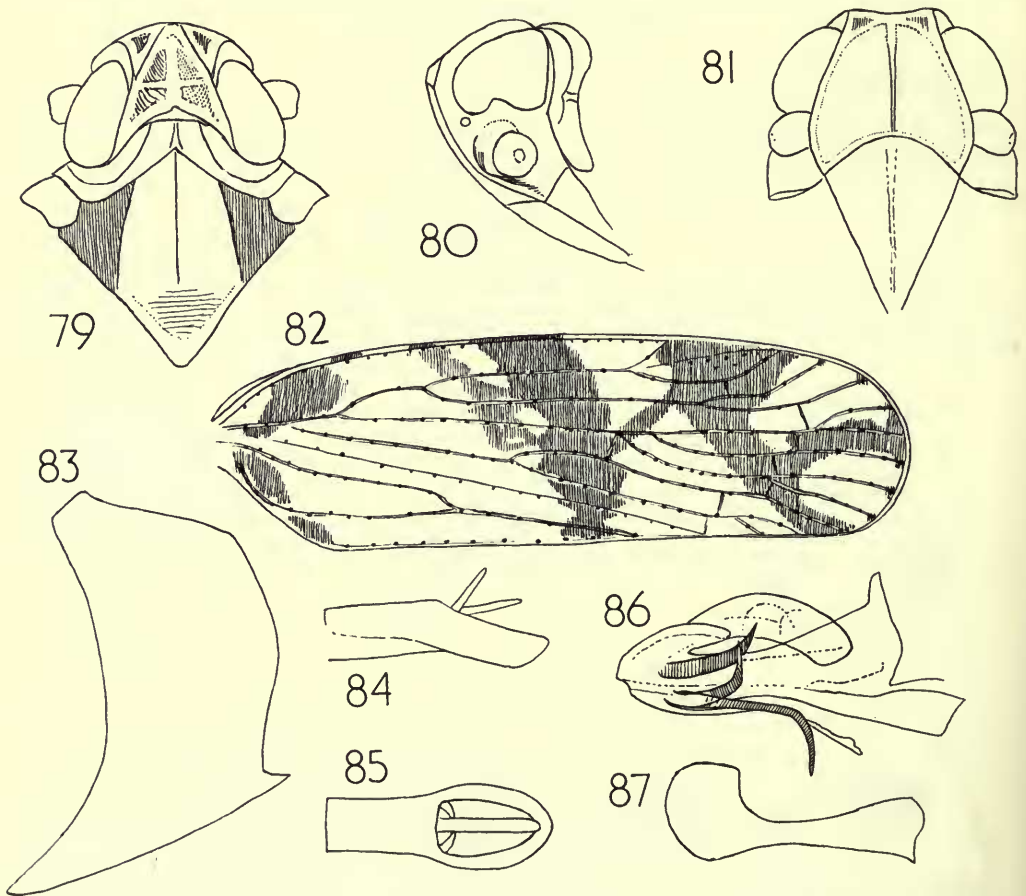
(Text-figs. 88-94)

♂ ♀. Vertex as long in middle line as broad at base of middle line, narrower at apex than at base, anterior margin subangulately convex, lateral margins diverging caudad, weakly obtusely angulately concave, basal margin approximately semicircularly excavate, disc rather hollowed



Figs. 74-78. *Cixiosoma platense* Berg. 74, Vertex, pronotum and mesonotum; 75, head in profile; 76, frons and clypeus; 77, tegmen; 78, female genitalia, posterior view.

out, medially carinate only in basal half and divided transversely by a straight carina that is interrupted at its middle; base of frons visible in dorsal view; frons in middle line longer than broad at widest part (nearly 1.2 : 1), widest at level of antennae, basal margin very weakly convex, lateral margins sinuate, frontoclypeal suture rather strongly convex, median carina more strongly raised than lateral marginal carinae, a short arcuate carina at base uniting lateral margins to apex of vertex, and so demarcating a small triangular facet on each side of frons at base, median ocellus absent; clypeus tricarinate, disc shallowly tectiform; rostrum reaching to post-trochanters, apical segment shorter than subapical, eyes broadly ovate, with a very small excavation below, ocelli distinct. Pronotum short, anterior margin transverse, posterior margin acutely angulately excavate, lateral carinae of disc following hind margin of eyes, a short carina between eye and tegula on each side, outer angle of lateral lobes subacute; mesonotum tricarinate, post-tibiae laterally trispinose, apically with six spines, basal post-tarsal segment with twelve small teeth, second segment broader between apical angles than long in middle, with about sixteen small scale-like teeth apically. Tegmina with $Sc + R$ and M united at base, and forming a very short stalk, $Sc + R$ forked at about one-third from base, M forked at level of nodal line,

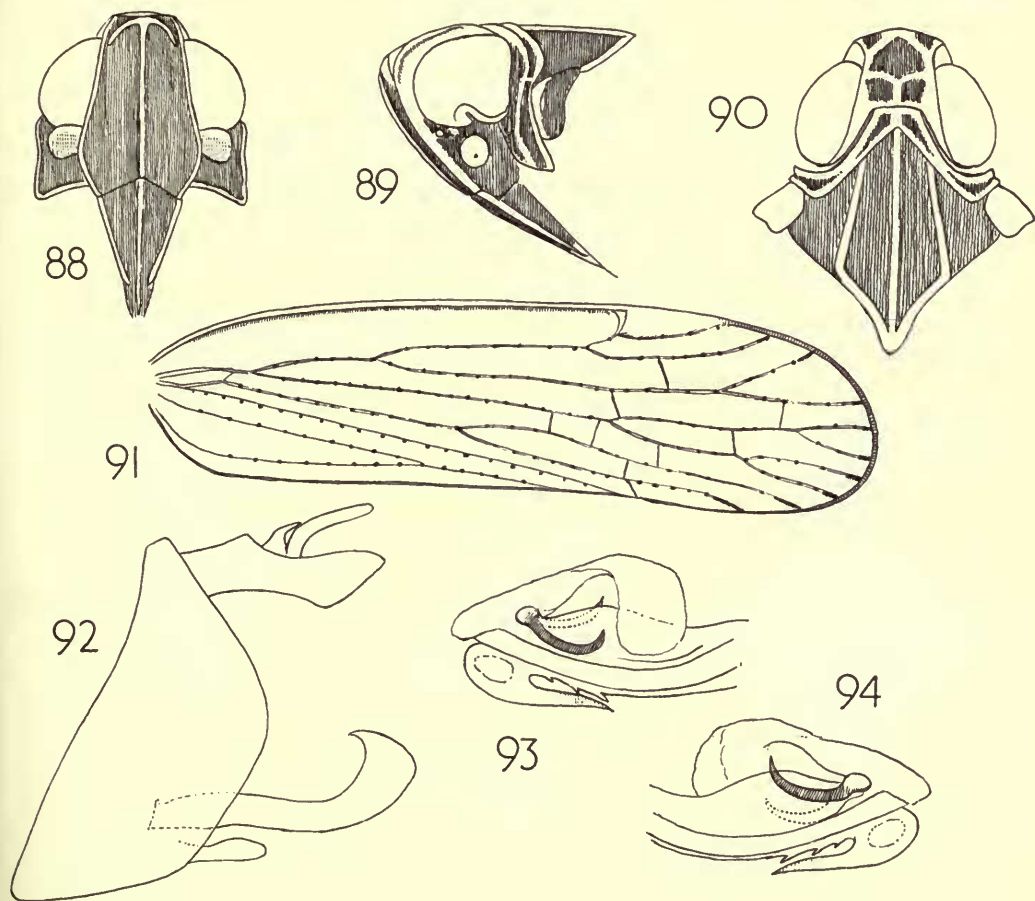


FIGS. 79-87. *Cixiosoma bonaerense* Berg. 79, Vertex, pronotum and mesonotum; 80, head in profile; 81, frons and clypeus; 82, tegmen; 83, pygofer, 84, anal segment, lateral view; 85, anal segment, dorsal view; 86, aedeagus, right side; 87, genital style.

Cu, forked a little distad of *Sc + R* fork, claval veins uniting at level of basal quarter of tegmen, basad of *Sc + R* fork, all veins evenly and densely granulate.

Black; all carinae, margins of legs, and tarsal segments apically, excepting the third segment, fulvous or orange-brown. Tegmina milky hyaline, veins stramineous, with castaneous granules.

♂. Anal segment of male moderately long, in side view with ventral margin concave in basal half, obtusely angulately convex in distal half, apical margin viewed from above rounded, medially excavate, anal style rather slender, attaining apical margin. Pygofer moderately long in side view with posterior margin broadly convex, laterodorsal angles not distinct, medioventral process about twice as long as broad, slightly tapering distad, deeply rounded at apex. Aedeagus subtubular, shallowly curved upward and expanding distad, phallobase dorsally longitudinally excavate, forming a shallow boat-like sclerite, and terminating in two spinose processes, one on each side, each about a quarter of total length of aedeagus, directed cephalad and curved upward at its tip, a stout spinose process arising just below apex, directed cephalad below aedeagus,



FIGS. 88-94. *Cixiosoma caliginosum* sp. n. 88, Frons and clypeus; 89, head in profile; 90, vertex, pronotum and mesonotum; 91, tegmen; 92, anal segment, pygofer and left genital style; 93, aedeagus, right side; 94, aedeagus, left side.

flagellum expanding distad, distally submembranous, irregularly trumpet-mouthed at apex. Genital styles moderately long, rather narrow and sinuate in basal two-thirds, subquadrate in apical third, with apical angle shortly produced in a curved spinose process.

♂: length, 4.1 mm.; tegmen, 4.8 mm.

♀: length 4.2 mm.; tegmen, 5.0 mm.

Holotype ♂. CHILE: Chiloe, in swamp at end of Chepu, 14.x.58, bog vegetation, *Leptocarpus* (M. W. Holdgate).

Paratypes: 4 ♀, same locality, 3-11.x.58, *Leptocarpus* swamp, *Tepualia* scrub (M. W. Holdgate); 1 ♀, Ensenada, 14-15.xii.36 (F. M. Edwards).

This species is readily separable from *C. platense* and *C. bonaerense* by its relatively narrow frons, and its black ground colour. The wax-secreting area of the female genitalia is much larger in *C. caliginosum* than in either of the other two species.

Family DELPHACIDAE

IDIOSYSTATUS Berg

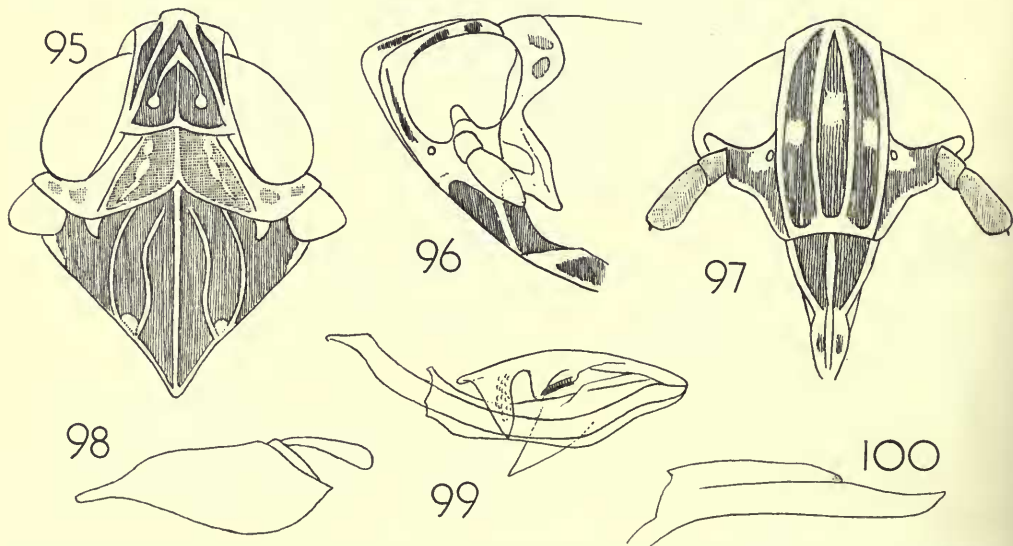
Idiosystatus Berg, 1883b: 231. Haplotype, *Delphax acutiuscula* Spinola.

Idiosystatus acutiusculus (Spinola)

(Text-figs. 95-100)

Idiosystatus acutiusculus Spinola, 1852a: 258.

CHILE: Chepu, 11 ♂, 3 ♀, 21.x.58, 2 ♂, 4 ♀, 19.x.58, 1 ♀, 24.x.58 (G. Kuschel); 30 ft., 4 ♂, 3 ♀, 3, 11.x.58, *Leptocarpus* swamp, secondary scrub (M. W. Holdgate);



FIGS. 95-100. *Idiosystatus acutiusculus* (Spinola). 95, Vertex, pronotum and mesonotum; 96, head in profile; 97, frons and clypeus; 98, anal segment, left side; 99, aedeagus, left side; 100, left genital style.

Coquimbo, Punta Teatines, 5 ♂, 5 ♀, 16.ix.52 (*G. Kuschel*); Santiago, Batuco, 5 ♂, 6 ♀, 21.xii.1955.

IDIOSEMUS Berg

Idiosemus Berg, 1833b: 233. Haplotype, *Liburnia xiphias* Berg.
Stenosystatus Muir, 1930f: 214. Orthotype, *Stenosystatus anonymi* Muir. **syn. n.**

Idiosemus xiphias (Berg)

Liburnia xiphias Berg, 1879b: 190.
Stenosystatus anonymi Muir, 1930f: 215 **syn. n.**

CHILE: Santiago, Bucalemu, 16 ♂, 9 ♀, 25.v.51 (*Peña*).

CALBODUS Spinola

Calbodus Spinola, 1852a: 261. Haplotype, *Calbodus pallidulus* Spin.

This genus is very close to *Eurysa*, but at present can be separated by the relatively longer rostrum, of which the apical segment surpasses the mesotrochanters, and by the post-tibial spur, which, though relatively solid, bears a row of even teeth along the margin. The frons is relatively more elongate than in species of *Eurysa*, and the carinae are moderately distinct at the junction of vertex and frons.

Calbodus pallidulus Spinola

Calbodus pallidulus Spinola, 1852a: 262.
Delphacodes correntosoensis Muir, 1929a: 80. **syn. n.**

CHILE: Chiloe, San Pedro, 42° S., 2,100 ft., 5 ♂, 6 ♀, 13.xi.58, forest edge scrub; 2,000 ft., 1 ♂, 10.xi.58, *Nothofagus* forest; 2,500 ft., 21.xi.58, 9 ♂, 4 ♀, grassland; Volcan Calbuco, 200 m., 4 ♂, 22.ii.56 (*G. Kuschel*).

Calbodus patquianus sp. n.

(Text-figs. 101-111)

♂ ♀. Vertex as long medially as broad at base, obtusely rounding into frons, very slightly narrower at apex than at base, lateral margins straight or shallowly concave, apical margin straight or feebly convex with submedian carinae weakly prominent, Y-shaped carina distinct, submedian carinae coarse, uniting at apex of vertex or at extreme base of frons, basal compartment of vertex wider at hind margin than greatest length (1.9: 1); and than median length (2.3: 1), frons in middle line longer than wide at widest part (about 1.6: 1), widest at middle, lateral margins shallowly convex, median carina simple, or forked at extreme base, clypeus at base slightly wider than frons at apex, postclypeal disc as long as broad at base, in profile shallowly convex, anteclypeus in profile shallowly convex; rostrum not reaching to post-trochanters, apical segment slightly shorter than subapical; antennae slightly surpassing fronto-clypeal suture, basal segment longer than broad (1.6: 1), second segment longer than first (1.8: 1); ocelli distinct but small. Pronotum with disc shorter in middle line than broad at anterior margin (1: 1.2), lateral carinae straight or weakly concave, not nearly attaining hind margin; a few pustules present near each lateral margin. Total length of mesonotum greater than that of scutellum (2.6: 1). Post-tibial spur shallowly tectiform, with twelve teeth, including a tooth at apex.

Dark testaceous or yellowish fuscous; carinae of head and thorax, five to seven round spots in each compartment of frons, apical segment of rostrum, pustules on pronotum, post-tarsi distally and post-tibial spur, stramineous; antennae, pleurites, pro- and mesocoxae, femora and tibiae, fuscous. Tegmina hyaline, veins concolorous.

♂. Anal segment of male short, ring-like, lateroapical angles each produced ventrad in a spinose process that is weakly curved laterad near its apex. Pygofer moderately long, latero-dorsal angles weakly produced, subrectangulate, no medioventral process present; posterior opening of pygofer about as broad as long, diaphragm medially rather wide, with dorsal margin horizontal, abruptly and deeply incised at middle, the margin on each side of the incision at its base produced ventrad in a spinose process. Aedeagus relatively long and narrow, tubular, bent upward through about 45 degrees near base, thence almost straight to apex, a dense group of minute denticles subapically on upper surface, orifice terminal, oblique, with lower margin produced. Genital styles relatively large, in posterior view extending laterad then dorsad, widening distad of middle, broadly bifurcate at apex.

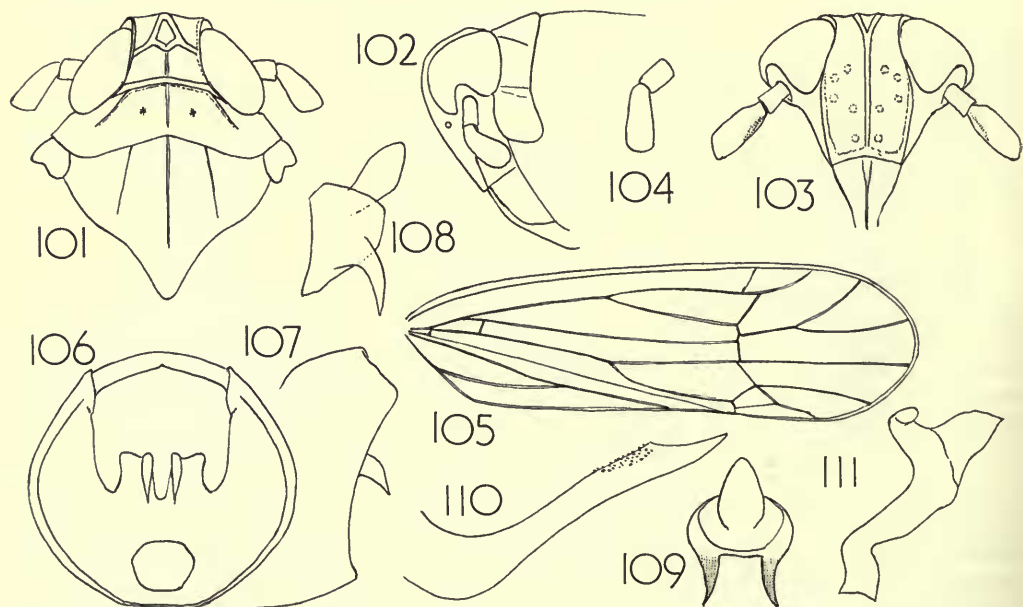
♂: length, 2.7 mm.; tegmen, 3.0 mm.

♀: length, 3.1 mm.; tegmen, 3.6 mm.

Holotype ♂. ARGENTINA: Patquia, La Rioja, 1. 1933 (*K. J. Hayward*), Brit. Mus. 1933-187.

Paratype ♀: same data.

This species is placed in *Calbodus* with some hesitation on account of differences in bodily proportions that, in sum, separate this species very markedly from *C. pallidulus*.



FIGS. 101-111. *Calbodus patquianus* sp. n. 101, Vertex, pronotum and mesonotum; 102, head in profile; 103, frons and clypeus; 104, antennae; 105, tegmen; 106, pygofer, posterior view; 107, pygofer, lateral view; 108, anal segment, lateral view; 109, anal segment, posterior view; 110, aedeagus; 111, genital style.

Without further information regarding the extent of variation in *Calbodus*, it would seem premature to define the genus rigidly by the characters exhibited by the type-species.

This species is well distinguished by the characters of a speckled frons and pustulate pronotum in combination with those shown by the male genitalia.

NOTHODELPHAX Fennah

Nothodelphax Fennah, 1963a : 15. Orthotype, *Liburnia foveata* Van Duzee, 1894e : 192.

Nothodelphax atlanticus (China) **comb. n.**

(Text-figs. 114-116)

Delphacodes atlanticus China, 1958 : 5.

Nothodelphax atlanticus nigrescens ssp. n.

(Text-figs. 112, 113, 115, 117)

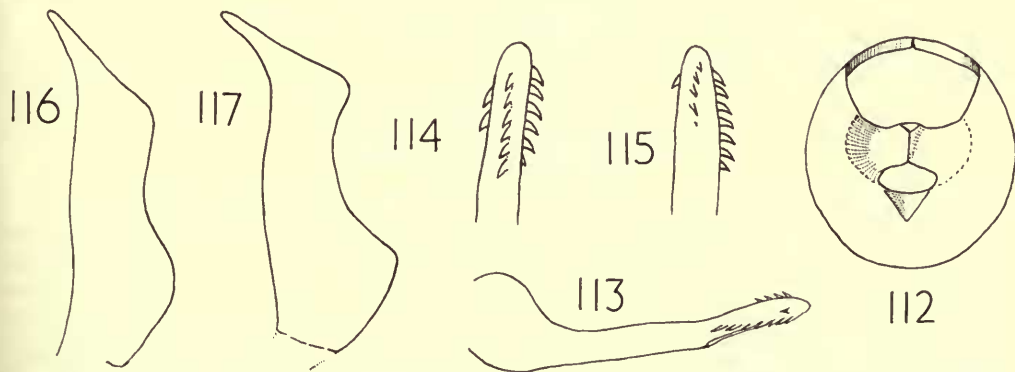
♂ ♀. Vertex as long as broad at base.

Intercarinal areas of frons, clypeus, genae in anterior half, abdomen except mediodorsally and laterally, pygofer except dorsally, anal style in both sexes, and ovipositor, piceous ; femora and tibiae with fuscous stripes ; first valvifers yellowish fuscous, abdominal terga of female yellowish brown except along middle line. Tegmina (brachypterous) translucent, ochraceous or suffused with yellowish brown, veins concolorous ; (macropterous) sordid yellowish translucent, marginal veins ferruginous or fuscous.

♂ (brachypterous) : length, 2.7 mm.

♀ : length 3.2 mm. ; tegmen, 3.8 mm.

Holotype ♂ of subspecies. CHILE : Isla Wellington, Puerto Eden, 60 ft., 6.xii.58 (G. Kuschel), in B.M. (N.H.).



FIGS. 112, 113, 115, 117. *Nothodelphax atlanticus nigrescens* subsp. n. 112, Pygofer, posterior view ; 113, aedeagus, left side ; 115, apex of aedeagus ; 117, genital style.

FIGS. 114, 116. *Nothodelphax atlanticus atlanticus* China. 114, Aedeagus ; 116, genital style.

Paratypes: 4 ♂, 3 ♀, same data, in scrub, grassland, sedge. Chiloe I., San Pedro, 42° S., 2,100ft., 2 ♂, 1 mutilated specimen, 13.xi.1958, forest edge scrub; Navarino I., Port Williams, 1 ♂, 3.ii.59, swept in *Marsippospermum* swamp.

Morphologically there is comparatively little difference between material of *N. atlanticus* from Chile, Falkland Is., Gough Id., and Tristan da Cunha, and such differences as have been noted (in colour pattern and in the shape of the genital styles) are here interpreted as being of less than specific value, on the grounds that other species in the genus differ from one another quite evidently in other characters such as aedeagal structure, as well as more distinctly in the form of the genital styles.

Although the present subspecies is distinctly darker than the typical subspecies, it does not closely resemble *N. foveata subfoveata* (Muir), which, apart from its more contrasting coloration, has a relatively shorter vertex and a male anal segment with the spinose processes rather close to one another.

The genus includes several North American species, for which new combinations are given below.

***Nothodelphax gillettei* (Van Duzee) comb. n.**

Liburnia gillettei Van Duzee, 1897a : 258.

***Nothodelphax consimilis* (Van Duzee) comb. n.**

Liburnia consimilis Van Duzee, 1897a : 249.

***Nothodelphax oclusa* (Van Duzee) comb. n.**

Liburnia oclusa Van Duzee, 1897a : 256.

***Nothodelphax neocclusa* (Muir & Giffard) comb. n.**

Delphacodes neocclusa Muir & Giffard, 1924a : 22.

***Nothodelphax lineatipes* (Van Duzee) comb. n.**

Liburnia lineatipes Van Duzee, 1897a : 255.

Family **DERBIDAE**

GONEOKARELLA Fennah

Goneokarella Fennah, 1952a : 142. Type-species, *Goneokarella maculivenis* Fennah.

***Goneokarella maculivenis* Fennah**

(Text-figs. 118-121)

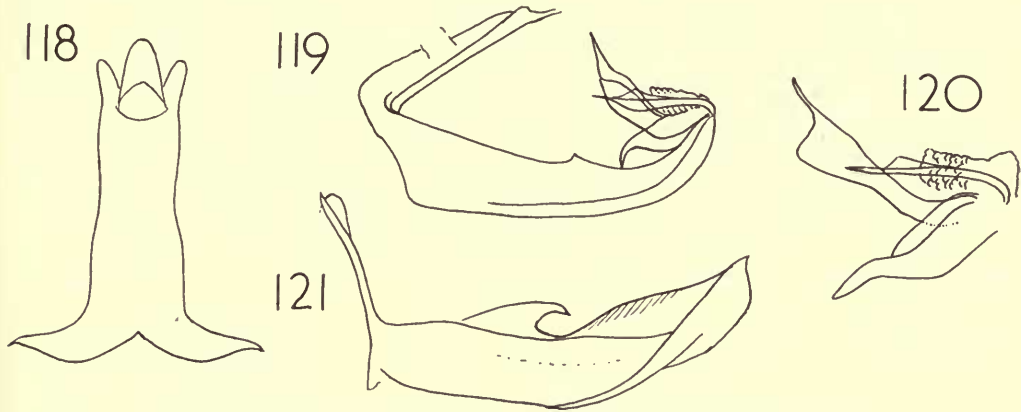
Goneokarella maculivenis Fennah, 1952a : 142.

♂. Anal segment of male in dorsal view longer than broad at middle (about 3 : 1), broad at extreme base, parallel-sided for most of length, apical margin deeply excavate, anal foramen situated near apex, anal style rather short, surpassing apical margin. Pygofer short, moderately long ventrally. Aedeagus rather long, tubular, tapering distad, three pairs of processes arising dorsally at apex, reflected anteriorly; the first pair rather broad, directed ventro-cephalad,

strongly narrowing distad of middle to a blunt point at apex; the second pair directed dorso-cephalad, rather narrow, widening distally, then abruptly narrowing, slender and acuminate at apex; the third pair directed cephalad, also rather narrow at base, gradually widening distad, rather abruptly narrowing at two-thirds from base, acute apically; a short subgranulate membranous lobe overlying all three pairs of processes basally. Genital styles long, slightly bent upwards in distal half, apical angle acute; a broad-based spinose process arising dorsally a little basad of middle, directed caudad, shallowly decurved and acuminate at tip.

CHILE: Isla Wellington, Puerto Edén, 25 ft.—1,200 ft., 43 ♂, 32 ♀, 29.xi—6.xii.58, *Nothofagus* forest, *Pernettya*, sedge and heath (M. W. Holdgate, G. Kuschel); Isla Chiloe, San Pedro, 600 ft.—2,100 ft., 3 ♂, 5 ♀, 13—15.xi.58 (M. W. Holdgate, G. Kuschel); Isla Piazza, Lecky Retreat, 25 ft., 1 ♀, 26.xii.58 (M. W. Holdgate).

This genus and *Phrygia* Stål (of which the haplotype, *P. fuscata* Stål, is from Brazil) occupy an isolated position in the Cenchreine Derbidae.



FIGS. 118—121. *Goneokavella maculivenis* Fennah. 118, Anal segment of male; 119, aedeagus, left side; 120, apex of aedeagus, left side; 121, left genital style.

Family ACHILIDAE

RHOTALA Walker

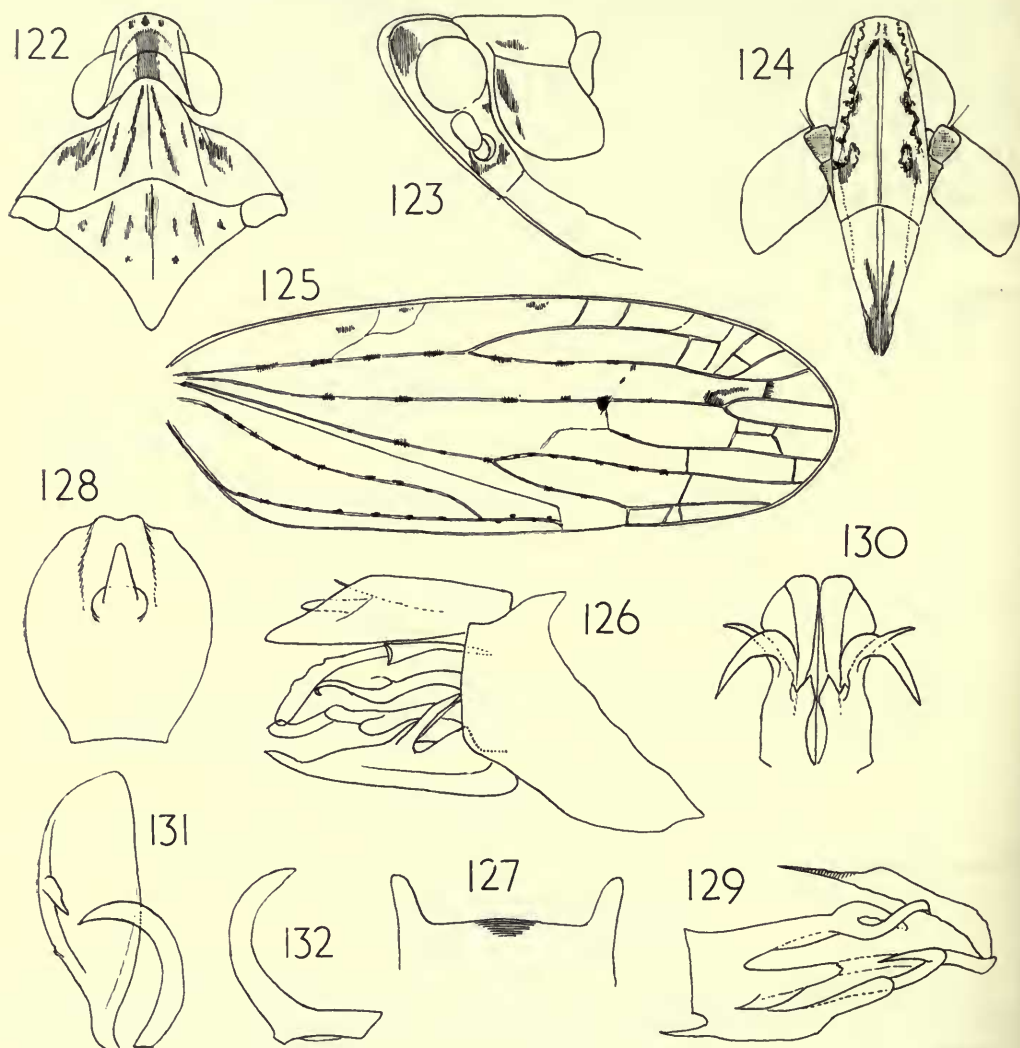
Rhotala Walker, 1857b: 152. Haplotype, *Rhotala delineata* Walker, 1857b: 152.

Rhotala valdiviana sp. n.

(Text-figs. 122—132)

♂. Vertex wider at base of middle line than long medially (about 1.6:1); anterior margin shallowly convex, lateral margins slightly converging distad, basal margin almost semicircularly excavate, median carina represented by a callus; no carina separating vertex from frons; frons longer than broad (2:1), basal margin feebly convex, lateral margins gradually diverging to below level of antennae, then incurved to frontoclypeal suture, disc rather narrowly depressed on each side of middle line, the depressed area widening distad; clypeus shorter than frons (1:1.3), disc flat, carinate coarsely in middle and finely at lateral margins, rostrum with sub-apical segment attaining post-trochanters, apical segment reaching to base of pygofer; eyes rounded, a little emarginate ventrally; ocelli distinct; antennae with basal segment short, ring-like, second segment pyriform. Pronotum with disc almost as long medially as broad at base,

tricarinate, a distinct carina on each side between eye and tegula. Post-tibiae laterally with five spines, apically with four large spines and one very small spine; basal metatarsal segment with nine teeth apically, one or two smaller than the others; second segment with eight teeth. Tegmina slightly surpassing abdomen, *Sc + R* fork, *Cu₁* fork and union of claval veins at approximately same level. Wings not quite reaching to apex of abdomen.



FIGS. 122-132. *Rhotala valdiviana* sp. n. 122, Vertex, pronotum and mesonotum; 123, head and pronotum, lateral view; 124, frons and clypeus; 125, tegmen; 126, male genitalia, lateral view; 127, posterior ventral margin of pygofer; 128, anal segment of male, dorsal view; 129, aedeagus, left side; 130, aedeagus, ventral view; 131, left genital style and associated spinose appendage, dorsal view; 132, spinose appendage of genital style, lateral view.

Ochraceous ; head and thorax with linear markings as shown in figure, pleurites and coxae in part, four rings on each femur and tibia of fore and middle legs, pro- and mesotarsal segments, distally, castaneous ; ventrites sublaterally dark yellowish brown, dark fuscous on posterolateral margins. Pygofer dark castaneous laterally, lighter castaneous at base ventrally, genital styles yellowish brown distally. Tegmina ochraceous, veins more or less regularly flecked with small castaneous spots, or very narrowly overlain with a percurrent castaneous line. Wings ochraceous hyaline.

Anal segment of male relatively large, broadly sub-ovate, shallowly decumbent on each side of middle, anal foramen situated at middle, a broad deep channel extending from this point to apical margin. Pygofer moderately long, in lateral view extending farther caudad dorsally than ventrally, dorsolateral angles rectangulate, lateral margin straight in upper half, broadly excavate in lower half, ventral margin entire, convex. Aedeagus broadly tubular at extreme base, abruptly dividing distally into two rami, one above the other ; the dorsal limb tubular, slightly depressed, membranous distally, a pair of strongly sinuate spinose processes arising about two-thirds from base, each directed ventrocaudad, then dorso-caudad, finally laterad ; the lower limb tubular, a pair of stout dorsally-compressed spinose processes emerging near apex, each curved laterad then cephalad ; aedeagal appendages rather narrowly tubular, surpassing apex of aedeagus by about a quarter of their length, each bearing at apex a broad thin flattened flagellum reflected cephalad, and produced distally into a slender tapering spinose process that crosses its counterpart in the middle line. Genital styles about twice as long as broad, lower margin in ventral view very weakly sinuate, dorsal margin in ventral view broadly convex, in lateral view, produced dorsad in basal quarter in a triangulate lobe with a short stout tooth on its outer face, distad of this lobe a large spinose process directed dorsocephalad ; mesad of genital styles, and approximated to their bases, though not attached, a pair of large stout scimitar-like processes, each produced mesad one-third from base in a shallow triangulate lobe.

Holotype ♂. CHILE : Volcan Calbuco, 200 m., Rio Peseado, 22. xi. 56 (*G. Kuschel*).

Paratype : 1 nymph, CHILE : Chiloe, Chepu, 42° S., 30 ft., 21. x. 58, *Tepualia* forest (*M. W. Holdgate*).

This species is distinguished from the Panamanian *R. ambigua* Fowler, the only other species found in the Americas, by its brachypterous form, by the shorter disc and longer occipital portion of the vertex, by the relatively shorter median disc of the pronotum, and its evenly curved lateral margins (which are almost straight in *R. ambigua*) and by the larger number of teeth on the hind margin of the basal two post-tarsal segments, the numbers being 5, 5 in the type of *R. ambigua*, and also in the Oriental species with which it was compared (*R. nebulosa* Dist., *R. funesta* Wlk., *R. delineata* Wlk., *R. albopunctata* Dist., and *R. philippinensis* Dist.).

CATONIA Uhler

Catonia Uhler, 1895a : 61. Logotype, *Catonia intricata* Uhler, 1895a : 61.

Catonia ornatipennis Blanchard comb. n.

(Text-figs. 133-138)

Cixius ornatipennis Blanchard, 1852a : 252.

CHILE : Isla Wellington, Puerto Edèn, 49° S., 2 ♂, 30. x. 58 (*G. Kuschel*), 40 ft., 6. xii. 58, in *Nothofagus* forest (*M. W. Holdgate*) ; Aisén, Rio Murta, 1 ♂, 25. i. 56

(*G. Kuschel*). There is one specimen in the Paris Museum labelled *Cixius ornatipennis* Bl., 15.43. This agrees with the original description and is here considered to be the type.

Catonia gayi Spinola **comb. n.**

(Text-figs. 139-143)

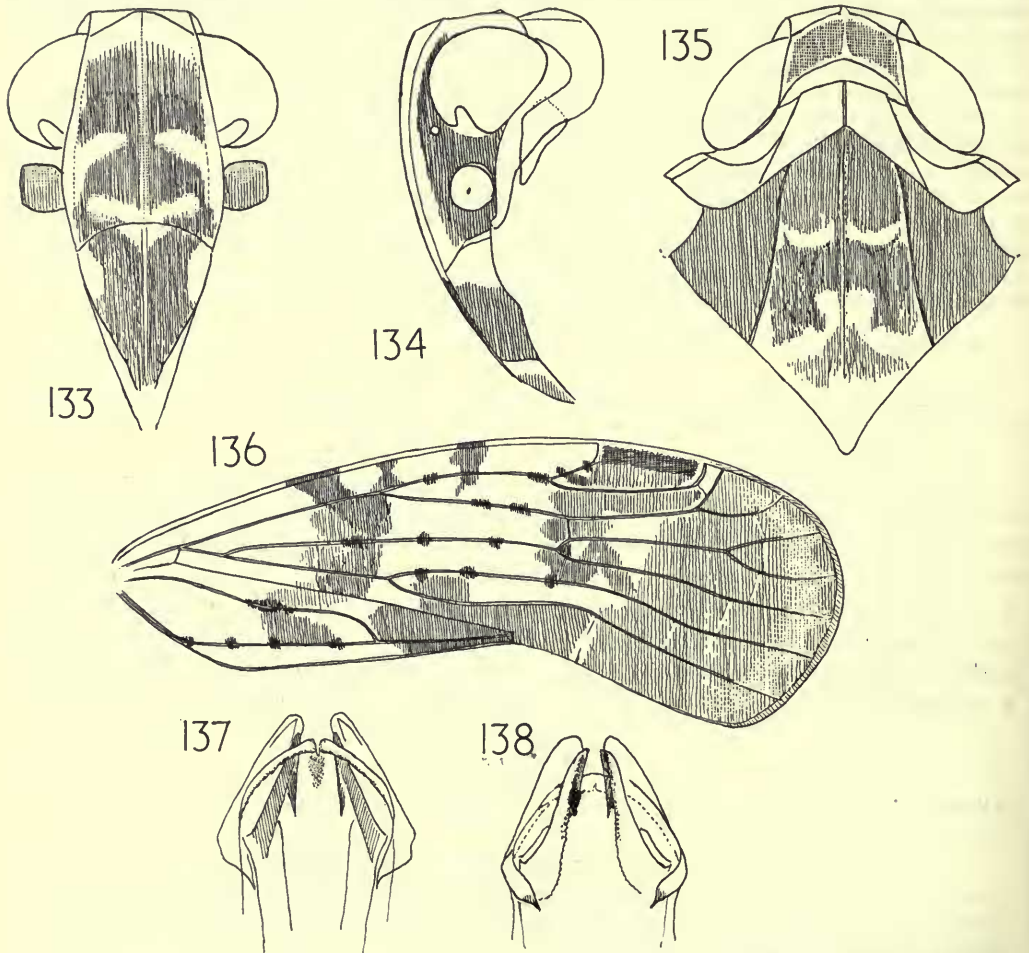
Cixius gayi Spinola, 1852a : 248.

Cixius maculatus Blanchard, 1852a : 252. **syn. n.**

Cixius valdiviensis Blanchard, 1852a : 253. **syn. n.**

Cixius irroratus Blanchard, 1852a : 253. **syn. n.**

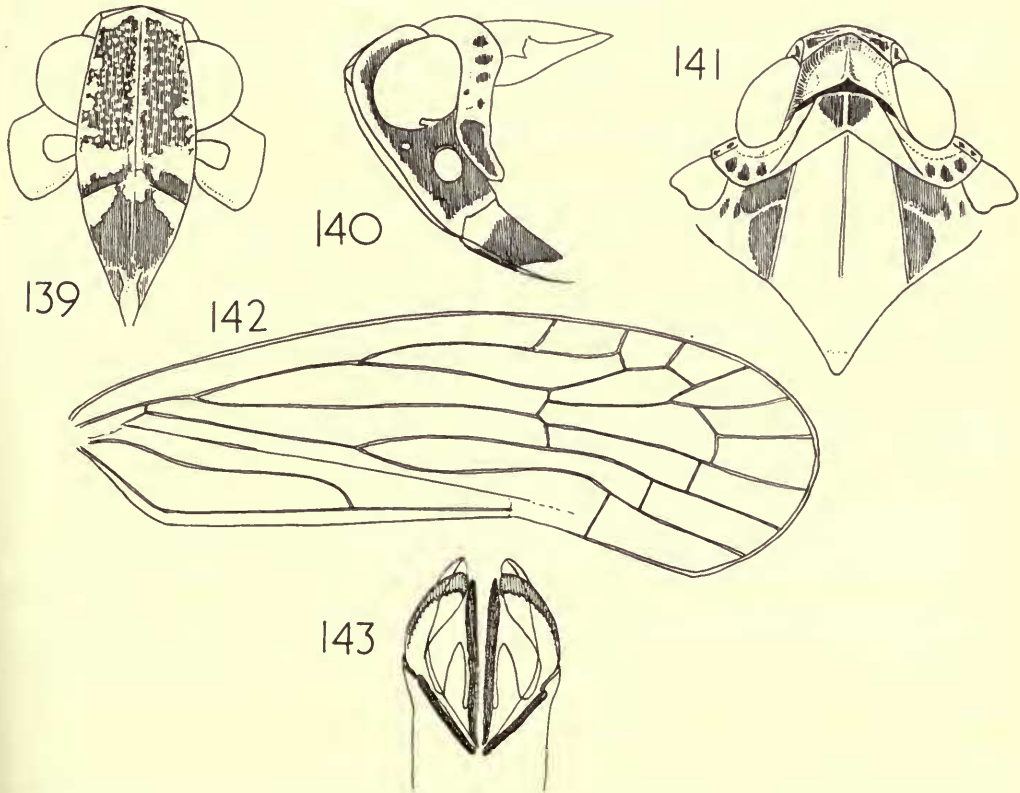
♂. Anal segment of male short, in profile with ventral margin convex in basal half, concave in distal half, in dorsal view almost semicircularly rounded, with apical margin feebly excavate at



FIGS. 133-138. *Catonia ornatipennis* (Blanchard). 133, Frons and clypeus; 134, head in profile; 135, vertex, pronotum and mesonotum; 136, tegmen; 137, aedeagus, ventral view; 138, aedeagus, dorsal view.

middle, anal style rather short, distinctly surpassing apical margin. Pygofer rather short, in lateral view with posterior margin almost straight, only very weakly convex, medioventral process not quite as broad as long, bifid in its distal half. Aedeagus with phallobase bilaterally symmetrical, each half produced distally into four unequal lobes, as follows: dorsally a ribbon-like lobe, denticulate on its dorsal margin, curved mesad apically to meet its counterpart in middle line; below this a lanceolate-spatulate lobe, slightly hollowed, like a scoop; mesad of this, and distinctly separated from it, a short, flattened thumb-like lobe directed caudad; along the mesal margin of this lobe a vertical, narrow, subspatulate lobe extending caudad almost to apex, its surface minutely studded with denticles; from the base of this lobe an oblique vertical flange extends across the ventral surface to the middle of the lateral margin; phallic appendages long, strap-like, not quite similar at apex, inner surface minutely denticulate. Genital styles as figured, distal half of dorsal margin produced dorsad in a quadrate lobe with its distal angles acutely produced, a long rod-like process arising on inner surface near base, directed dorsad, ventral margin of styles scroll-like basally and incurved to meet in middle line.

CHILE: Isla Wellington, Puerto Edén, 7 ♂, 2 ♀, 13, 30.xi.58, under *Nothofagus nitida* (G. Kuschel); 40 ft., 6.xii.58, in *Nothofagus* forest (M. W. Holdgate); I. Chiloe, Chepu, 6 ♂, 16, 19.x.58 (G. Kuschel); Valdivia, El Mirador, 1,600 m., 2 ♀, 5.i.57 (G. Kuschel).



FIGS. 139-143. *Catonia gayi* (Spinola). 139, Frons and clypeus; 140, head and thorax, lateral view; 141, vertex, pronotum and mesonotum; 142, tegmen; 143, aedeagus, dorsal view.

The description given by Spinola refers primarily to a species with a frons speckled with yellow ; a form with " dos fajas transversales blancas en la frente " is referred to as a variety in a postscript to the description. The writer accordingly here restricts Spinola's specific concept to the species with a speckled frons, and, as a result, is led to make the synonymy given above. A figure purporting to be that of *Cixius gayi* Spin., is given in pl. 3 fig. 3 of the *Atlas Zoologico*, but in fact represents the much larger *Cixius chilensis* Spin., which belongs in the Dictyopharid genus *Chondrodera* Mel.

The writer has not seen the type of *Cixius gayi* Spin., and it was not traced in the Paris Museum. The three species here placed in synonymy with it are each represented in the Paris Museum by a single specimen, labelled, respectively, *Cixius maculatus* Bl. 15.43, *Cixius valdiviensis* Bl. 15.43, and *Cixius irroratus* Bl. 15.43. Each agrees with the original description and is considered to be the type.

Family DICTYOPHARIDAE

CHONDRODERA Melichar

Chondrodera Melichar, 1912a : 157. Orthotype, *Chondrodera granicollis* Melichar, 1912a : 217. *Taractellus* Metcalf, 1948 : 77. Orthotype, *Cixius chilensis* Spinola. **syn. n.**

Chondrodera chilensis (Spin.)

Cixius chilensis Spinola, 1852a : 249.

The figures given in Gay's *Atlas zoologico, Entomologia, Hemipteros*, pl. 3, figs. 3, 3a-c, refer to *C. chilensis*, and not to *Cixius gayi* Spin., as stated both in the Atlas and on p. 248 of the seventh volume of the *Historia de Chile*.

CHILE : Santiago, La Florida, 1 ♀, 28.iii.1956 (*G. Kuschel*).

SICORIS Stål

Sicoris Stål, 1866a : 151. Orthotype, *Dictyophara gayi* Spinola, 1852a : 243.

This genus and *Sicorisia* Melichar may be separated as follows.

Frons carinate only submedially in basal half, and only medially in distal half, in profile distinctly concave ; eyes with a wide area behind, but no callus ; basal segment of post-tarsus with 22 teeth at apex, second segment with 16 teeth

***SICORIS* Stål.**

Frons tricarinate throughout, in profile straight ; eyes with a thick callus behind ; basal segment of post-tarsus with 14-16 teeth at apex, second segment with 14 teeth

***SICORISIA* Melichar**

Sicoris gayi (Spinola)

Sicoris gayi Spinola, 1852a : 243.

♂. Anal segment of male about twice as long as broad, in profile shortly and abruptly deflexed at apex, apical margin truncate, apical angles not at all produced, anal foramen in apical quarter. Aedeagus in repose tubular, ensheathed in membranous folds, a pair of tubular membranous

processes arising dorsally at apex directed cephalad above aedeagus, each tapering gradually into a slender spinose process; a pair of short broad flattened blade-like pigmented processes arising at base of aedeagus lateroventrally, directed caudad. Genital styles rather less than twice as long as broad, in side view with lower margin shallowly convex, meeting apical margin subrectangulately, apical margin oblique, straight, as long as dorsal margin, dorsal margin straight, ascending to apical angle, which is produced in a short stout spine curved cephalad; a stout blunt spine on outer surface just below dorsal margin at its middle.

CHILE: Santiago, Cuesta Zapata, 1 ♀, 30.xi.1947 (*G. Kuschel*); La Curro, 3 ♂, 27.i.51 (*J. Herrera G.*).

SICORISIA Melichar

Sicorisia Melichar, 1912a: 161. Orthotype, *Sicorisia discreta* Melichar, 1912a: 161.

Sicorisia discreta Melichar

Sicorisia discreta Melichar, 1912a: 161.

♀. Frons flat, tricarinate throughout, a moderately broad margin behind each eye, developed as a thick callus. Post-tibiae with four spines laterally, eight apically, basal post-tarsal segment with two simple teeth and twelve to fourteen scale-bearing teeth, second segment with two simple teeth and twelve scale-like teeth. Tegmina coelopterous, with Cu_1 three-branched, forking at about one-third from base. Wings about two-thirds as long as tegmina, narrow, strap-like.

CHILE: E. Peumo, 1 ♀, 17.xi.51 (*J. Herrera G.*), in U.S.N.M.

Sicorisia breviceps sp. n.

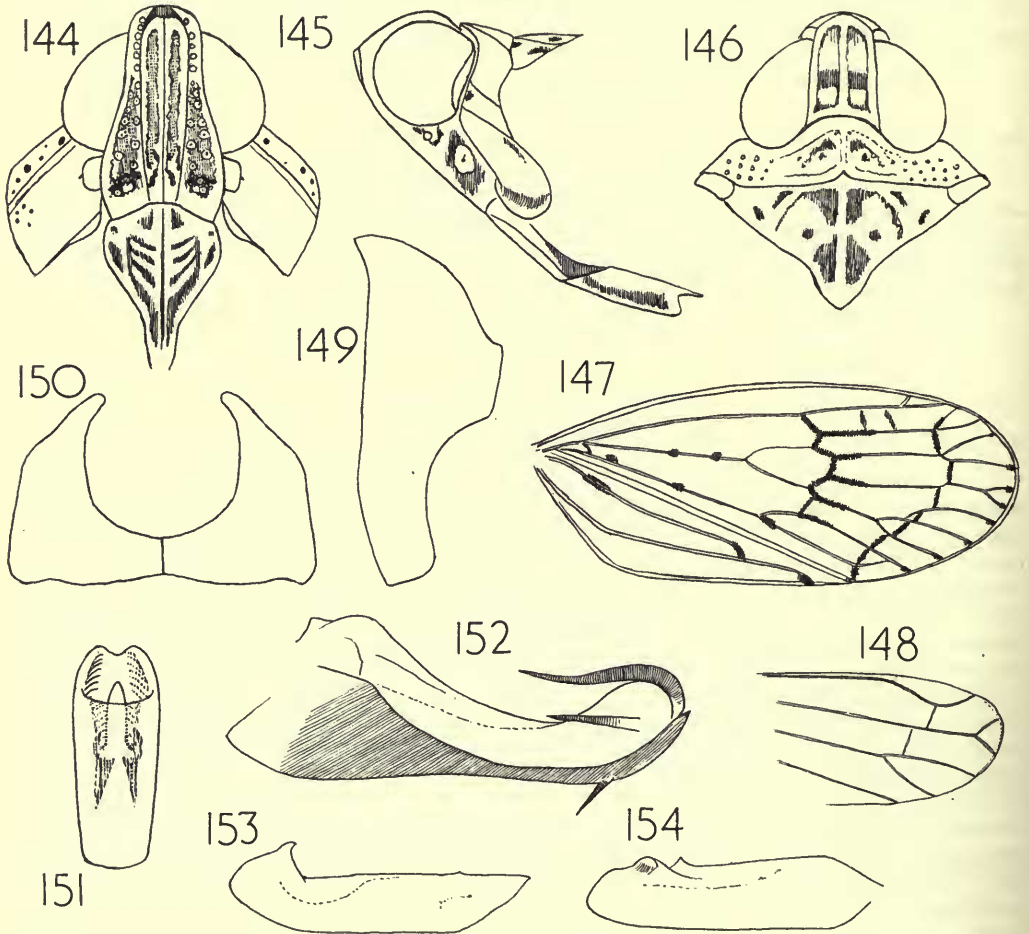
(Text-figs. 144-154)

♂. Vertex longer than broad at base (almost 1.4:1), basal margin weakly concave, lateral margins straight, slightly converging distad, apical margin convex, all margins carinate, including basal margin, median carina distinct throughout; frons in middle line longer than broad (nearly 1.7:1), wider at apex than at base, lateral margins sinuate, disc tricarinate, in profile straight, except at base where it curves backward to vertex; clypeus distinctly broader than frons, post-clypeal portion with lateral margins carinate, strongly convex, median carina distinct; rostrum reaching beyond middle of abdomen, subapical segment longer than apical, and surpassing post-trochanters. Pronotum rather short, anterior margin of disc weakly convex, posterior very weakly concave, almost straight, median carina distinct, lateral carinae of disc feeble, closely following hind margin of eyes, two carinae on each side between eye and lower half of tegula, lateral lobes with ventral margin bent anteriorly, eyes round, bordered posteriorly by a callus, ocelli distinct, a short oblique carina across gena just below ocellus, antennae with first segment very short, second segment globose; mesonotum broader than long, disc tricarinate, with lateral carinae curved mesad anteriorly to form a transverse carina, and strongly diverging basad. Legs slender, protibiae longer than profemora (about 1.2:1), post-tibiae with five teeth laterally, eight apically, basal metatarsal segment with two simple teeth and twelve small scale-bearing teeth, second metatarsal segment with two simple and twelve small scale-bearing teeth.

Tegmina coelopterous, longer than broad (about 2.2:1), deeply rounded apically, $Sc + R$ forked at level of union of common claval vein with margin, M fork at middle of tegmen, Cu_1 forked slightly distad of M fork, and with only two veins at apex; common claval vein shorter than anterior claval vein. Wings not quite as long as tegmina, and about half as wide, M and Cu_1 each forked once near apex.

Ochraceous; carinae of frons and clypeus, and lateral carinae of vertex, intercarinal areas of frons and clypeus interruptedly, and of vertex and mesonotum at base and apex, lateral lobes of pronotum and pleura except at margins, more or less dilute fuscous; a transverse band across vertex, genae near antennae, punctation on pronotal disc, four spots on mesonotum, one in each compartment, and longitudinal stripes on all legs, and apical segment of pro- and mesotarsi, piceous. Tegmina translucent, two ovate spots on *M* and one on *Cu*₁, and all cross-veins, fuscous piceous. Wings milky hyaline, veins brown.

Anal segment of male in dorsal view longer than broad (about 2.5 : 1), lateral margins parallel, apical margin slightly incised at middle. Pygofer moderately short, dorsolateral angles moderately produced caudad in a rounded-truncate lobe, weakly inflected distally. Aedeagus tubular, almost correct, with a pair of moderately short spinose processes ventrally three-quarters from base, a pair of moderately short spinose processes laterally a little before apex, and a pair of



FIGS. 144-154. *Sicorisia breviceps* sp. n. 144, Frons and clypeus; 145, head in profile; 146, vertex, pronotum and mesonotum; 147, tegmen; 148, apex of wing; 149, pygofer, lateral view; 150, pygofer, dorsal view; 151, anal segment, dorsal view; 152, aedeagus, left side; 153, right genital style, ventral view; 154, left genital style, lateral view of mesal surface.

longer spinose processes arising at apex, directed cephalad above aedeagus. Genital styles relatively long and narrow, dorsal and ventral margins parallel for much of their length, apical angle produced dorsad in a short spinose process, and a short acute lobe directed mesad on inner surface of style.

♂. (coleopterous): length, 3.9 mm.; tegmen 3.0 mm.

Holotype ♂. CHILE: V. Marga Marga, in B.M. (N.H.).

This species differs from *S. discreta* in the much shorter vertex, the degree of curvature of the frontal margins, the shape of the tegmina and wings and in the venation of the former.

MYROPHENGES gen. n.

Type-species, *Issus planifrons* Spinola, 1852.

Head with eyes much narrower than pronotum. Vertex about twice as broad as long, anterior margin convex, lateral margins straight, slightly diverging basad, basal margin shallowly concave, median carina distinct, obsolete distally, disc shallowly depressed, base of frons amply visible from above, more shallowly convex than anterior margin of vertex; frons about as long as broad, disc shallowly convex basally, less so apically, basal margin, as visible in anterior view, transverse or shallowly convex, lateral margins diverging to below level of antennae, thence rather strongly incurved to frontoclypeal suture, disc rugose punctate, with median carina absent basally, broad and only feebly indicated distally; clypeus about as long as broad at base, ecarinate, mandibular sclerites amply visible in anterior view; rostrum surpassing mesotrochanters, scarcely attaining post-trochanters, apical segment about two-thirds of length of subapical; antennae short, basal segment ring-like, scarcely visible, second segment subglobose; ocelli relatively large, eyes rounded, not or little excavated beneath. Pronotum about as long as vertex, median disc about twice as broad as long, tricarinate, a carina on each side between eye and basal cell in tegmen, a stouter carina on each side below this, between eye and tegula; mesonotum broader than long, disc flat, lateral carinae distinct, median carina absent; legs rather short, profemora and mesofemora a little compressed laterally, post-tibiae with three spines laterally, one large and five smaller spines apically, basal metatarsal segment with seven small even teeth apically, second segment with six teeth, one larger than the others. Third, fourth and fifth abdominal terga each with two transverse rows of pores.

Tegmina subcoriaceous, little surpassing abdomen and decurved distally, *Sc* + *R* forked near base, each of these veins simple to apex, *M* forked near apex, *Cu*₁ forked at level of union of claval veins, two rows of transverse veinlets present; claval suture distinct, claval veins uniting at three-quarters from base, common vein entering apex of clavus. Wings as long as tegmina, all veins simple.

Anal segment of male short. Pygofer short, distal margin transverse, united with convolute genital styles.

The generic concept is based on the specimen in the British Museum here figured, which is believed to represent the species cited. It stands far apart from all others. In the form of the vertex it can be compared only with *Taosa*, *Brachytaosa* and *Cladypha*. In the first two, a scale is attached to each of the teeth of the distal margin of the post-tarsal segments, a structure absent in the present genus, whereas in *Cladypha*, with which it agrees better in head structure, a pad of setae is developed on the first and second post-tarsal segments, and in the tegmen, a cross vein is present in the clavus, structures, again, not found in *Myrophenges*. Moreover, in *Cladypha* the head is distinctly wider than the pronotum.

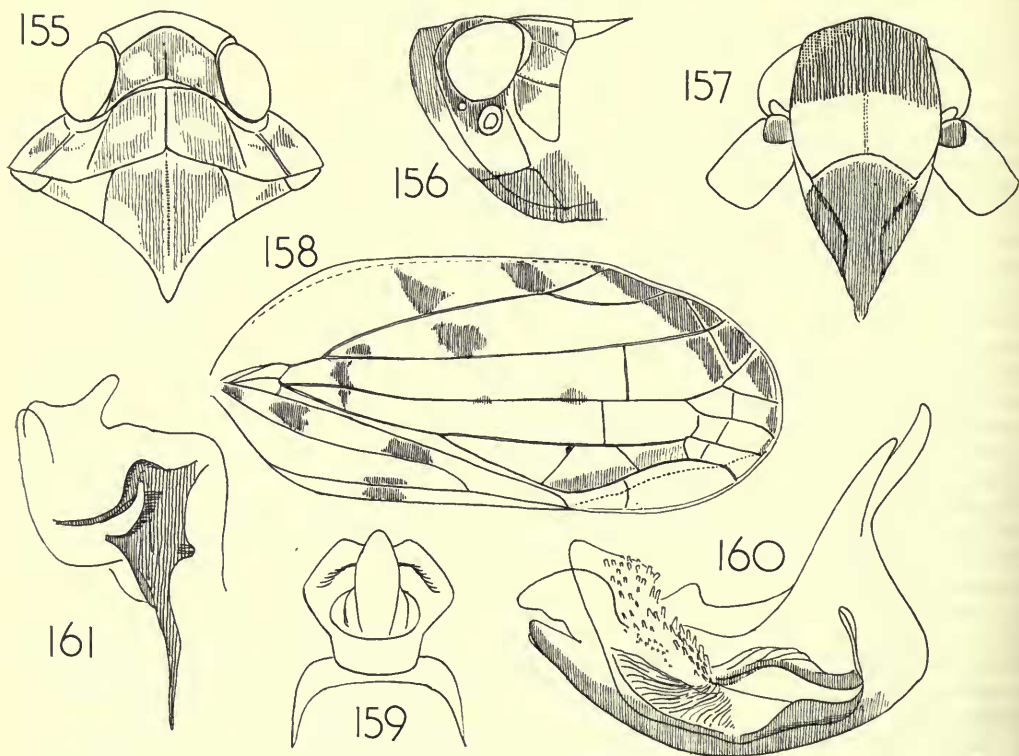
Myrophenges planifrons (Spinola) **comb. n.**

(Text-figs. 155-161)

Issus planifrons Spinola, 1852a : 265.

♂. Anal segment of male in dorsal view about as broad as long. Pygofer moderately long. Aedeagus comprising a deep narrow trough, with its dorsal margins not symmetrical on each side; within this trough a subtubular membranous process, upcurved distally, and fimbriate on dorsal surface in distal half. Genital styles relatively broad, with apical angle produced in a stout finger-like lobe; a broad lobe arising on inner surface of style in basal half, produced cephalad and tapering.

S. CHILE : 1 ♂, Llanquihue (*F. M. Edwards*), B.M. 1927-63.



FIGS. 155-161. *Myrophenges planifrons* (Spinola). 155, Vertex, pronotum and mesonotum; 156, head in profile; 157, frons and clypeus; 158, tegmen; 159, anal segment of male; 160, aedeagus, left side.

Family ISSIDAE

NOTOSIMUS gen. n.

Type-species, *Conosimus angustipennis* Melichar, 1906.

Vertex rather broader between eyes than long in middle (less than 1.3 : 1), approximately pentagonal with anterior margin obtusely angulate at middle, lateral margins straight and

posterior margin shallowly excavate, disc flat or feebly depressed, feebly carinate medially; frons with greatest length subequal to greatest width, in ventro-anterior view with basal margin convex, lateral margins convex, frontoclypeal suture deeply concave, frons tricarinate; clypeus subequal to greatest length of frons, medially elevated but not carinate; rostrum reaching to post-trochanters; subapical segment shorter than apical; antennae with basal segment short, ring-like, second segment longer than broad, cylindrical, widening distally, obliquely truncate at apex, ocelli absent, eyes round, rather weakly emarginate below. Pronotum in middle line more than half as long as vertex, anterior margin strongly convex, posterior margin weakly concave, disc ecarinate except for a feeble median carina, a short coarse carina at each lateral margin; mesonotum rather broader than long, disc tricarinate with lateral carinae concave; tegulae present, largely concealed; post-tibiae with two spines laterally, about seven apically, basal metatarsal segment with about six spines. Tegmina longer than broad (more than 2 : 1) broadest near base, narrowest distally, costa strongly convex in basal quarter, weakly sinuately concave in distal half, apical angle acutely rounded, anal angle obtusely rounded, apical margin oblique, weakly convex, *Sc* + *R*, and *M* simple, *Cu*₁ forked at middle, claval suture extending to apical quarter of tegmen. Wings not quite as long as tegmina.

Anal segment of male moderately long, weakly deflexed in apical half, with sides deeply impressed. Pygofer rather short, dorsolateral angles moderately produced caudad, deeply rounded. Aedeagus complex, almost as deep dorsoventrally as long. Genital styles each triangular in side view, united mesally along their ventral margin.

Although the subfamilial affinity of this curious species cannot be determined with absolute certainty until the female genitalia can be examined, it is confidently regarded as a member of the Acanaloniinae, and in the writer's key to this subfamily (Fennah, 1954 : 472), if the presence of the lateral pronotal carina is ignored, it runs to couplet (3) (4), and differs from *Galapagosana* and *Euthiscia* in the claval suture not reaching to the apical margin, and from *Thiscia* and *Acanalonia* in the tegmina being widest much basad of the middle.

From *Conosimus*, to which the species was referred by Melichar, it differs in the relatively much broader frons, in the strongly concave frontoclypeal suture, the carination of the mesonotum and the presence of well-developed wings.

The opportunity is here taken of recording that the references to the second post-tarsal segment in couplet (5) (6) of the key cited above, and on the page following the key, should have been to the first post-tarsal segment.

Notosimus angustipennis (Melichar) comb. n.

(Text-figs. 162-170)

Conosimus angustipennis Melichar, 1906 : 109.

♂. Anal segment of male relatively narrow, shallowly decurved distally, a deep groove along each side distad of middle. Pygofer rather short, dorsolateral angles roundly produced caudad, lateral margin sinuate, shallowly excavate near middle. Aedeagus complex, phallobase tubular, much shorter than deep dorsoventrally; dorsal margin produced caudad medially in a finger-like lobe (Text-fig. 169, *a*), laterally a pair of dorsolateral lobes (*b*), two pairs of submedian spinose processes, one arising on inner surface of phallobase (*c*), the other marginally (*d*); ventrally an unpaired lobe narrowly produced dorsad at apex (*e*) and with a pair of vertical processes subapically (*f*); a pair of long taeniate processes arising dorsally, curving ventrocephalad (*g*).

Genital styles triangular, with dorsal and ventral margins almost straight, apical angle produced dorsad in a short blunt lobe, apical margin shallowly sinuate, produced at middle in a small acute process; ventral margin slightly invaginated before apex.

ARGENTINE: La Rioja Prov., Patquia, 1 ♂, i. 1933 (*K. J. Hayward*), B.M. 1933-333.

PLAGIOPSIS Berg

Plagiopsis Berg, 1883: 189. Haplotype, *Plagiopsis distanti* Berg, 1883: 191.

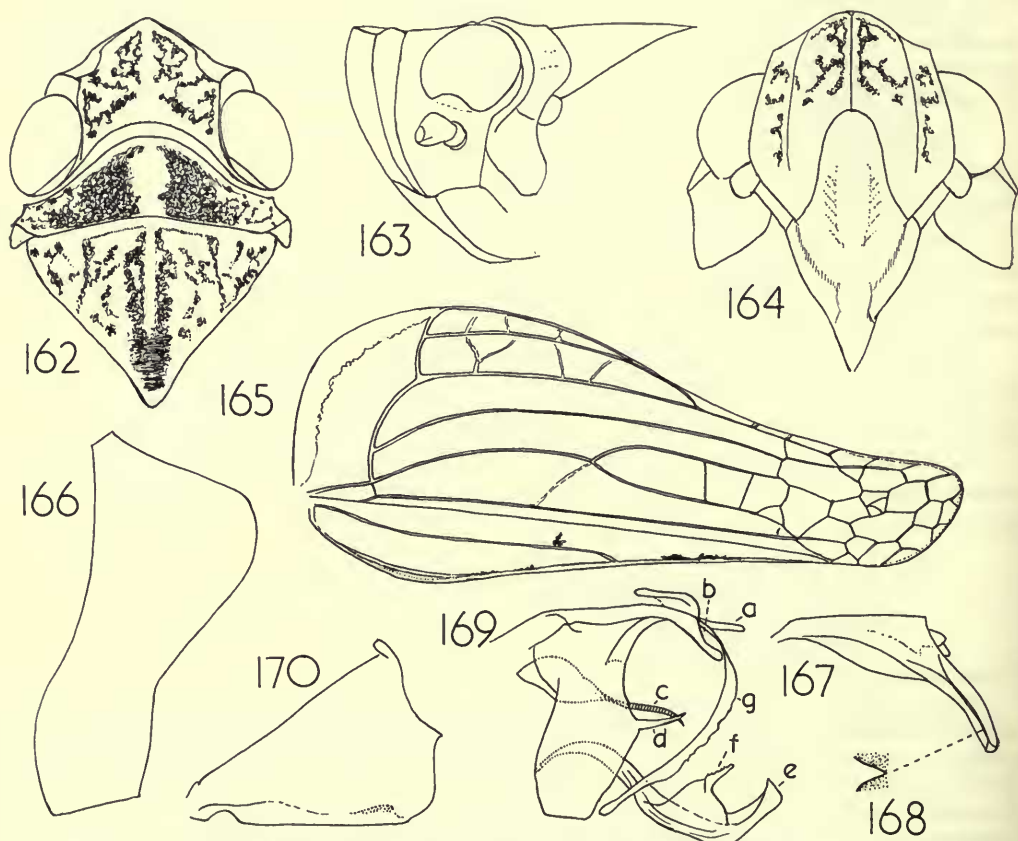
Plagiopsis scotti Breddin

(Text-fig. 171-175)

Plagiopsis scotti Breddin, 1897a: 17.

♀. Post-tibiae with one spine laterally, six apically, basal and second metatarsal segments each with two spines.

Anal segment of female and posterior margin of seventh (pregenital) sternite of female as figured.



FIGS. 162-170. *Notosimus angustipennis* (Melichar). 162, Vertex, pronotum and mesonotum; 163, head and thorax, lateral view; 164, frons and clypeus; 165, tegmen; 166, pygofer lateral view; 167, anal segment, lateral view; 168, section of groove along lateral margin of anal segment (diagrammatic); 169, aedeagus, left side (for lettering see text); 170, left genital style, lateral view.

ARGENTINA: Chaco, 1 ♀, 29.x-11.xi.1953 (*K. J. Hayward*), B.M. 1934-519.

Plagiopsis bergi Breddin

(Text-figs. 176-180)

Plagiopsis bergi Breddin, 1897a : 18.

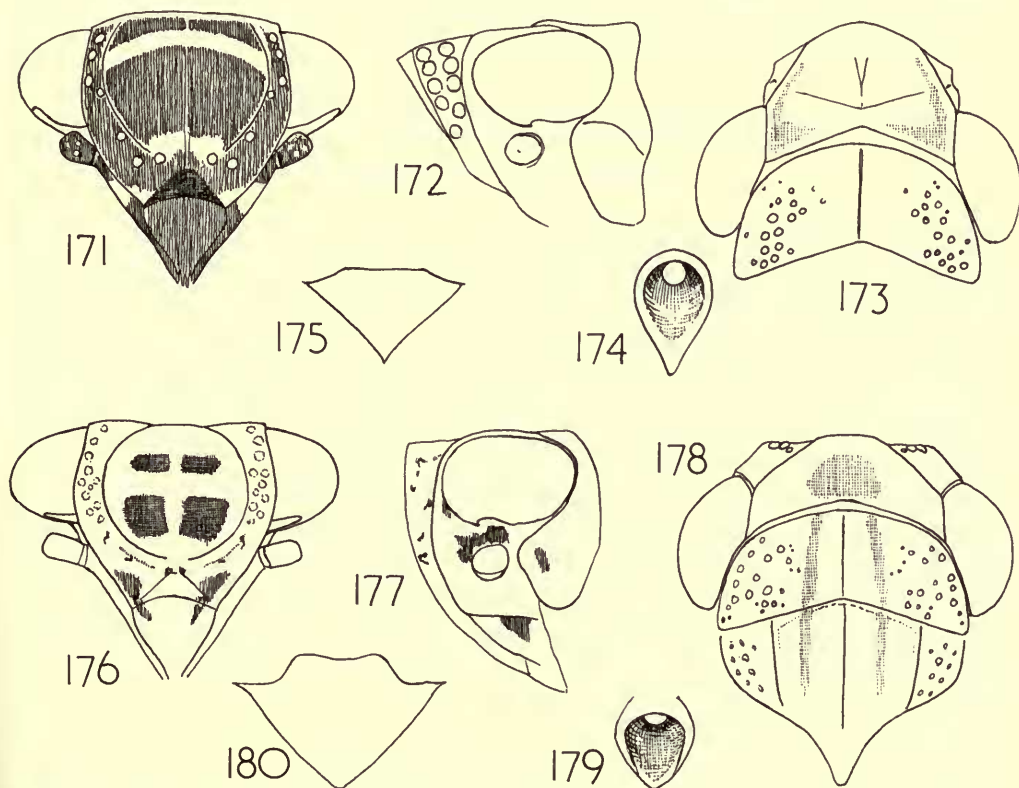
♀. Anal segment of female and posterior margin of seventy (pregenital) sternite of female as figured.

ARGENTINA: Chaco, Roque Saen, Peña, 1 ♀, 1932 (*K. J. Hayward*), B.M. 1933-58.

SARNUS Stål

Sarnus Stål, 1866a : 204. Logotype, *Issus decipiens* Spinola, 1852 : 264.

Post-tibiae with two spines laterally, eight apically, basal metatarsal segment with nine spines, second segment with two. Wings reduced to small lobes.



FIGS. 171-180. *Plagiopsis scotti* Breddin. 171, Frons and clypeus; 172, head in profile; 173, vertex and pronotum; 174, anal segment of female, posterior view; 175, seventh sternite of female, ventral view, posterior margin uppermost. *Plagiopsis bergi* Breddin. 176, Frons and clypeus; 177, head in profile; 178, head, pronotum and mesonotum; 179, anal segment of female, posterior view; 180, seventh sternite of female, ventral view; posterior margin uppermost.

Three species before the writer do not agree with a specimen labelled *Issus decipiens* Spin. from Chile in the Paris Museum. The last has a frons rather distinctly widening distally, and with the basal two thirds of the disc (except submarginally) very dark fuscous, almost black, with the short portion of the incomplete median carina stramineous, and the apical third of the disc pale. The three species may be separated as follows.

- | | | |
|---|---|---------------------------------|
| 1 | Tegmina with apical margin oblique, almost straight, apical angle subacutely rounded. Anal segment of female three times as long as broad at widest part | <i>rhomboidalis</i> (p. 269) |
| - | Tegmina with apical margin rounded and broadly rounding into costal margin without any evident apical angle. Anal segment of female not more than twice as long as broad at widest part | 2 |
| 2 | Lateral margins of frons shallowly arcuate. Ground colour of body and tegmina stramineous, little sprinkled with piceous. | <i>gilvus</i> (p. 270) |
| - | Lateral margins of frons straight. Colour of body and tegmina stramineous or testaceous, heavily marked with castaneous-fuscous. | <i>rectemarginatus</i> (p. 268) |

Sarnus rectemarginatus sp. n.

(Text-figs. 181, 182, 190-194)

♂ ♀. Vertex broader than long in middle line (about 4.6 : 1), frons in middle line longer than broad (more than 1.2 : 1), wider at base than at apex (1.5 : 1), lateral margins very shallowly sinuate, almost straight to distal fifth, thence incurved to frontoclypeal suture, median carina distinct in basal half, obscurely present in distal half. Tegmina with apical margin convex, broadly rounding into costal margin.

Stramineous, but so heavily sprinkled castaneous-piceous, in the same basic pattern as in *S. gilvus*, that the total area, occupied by each hue are about equal. Tegmina minutely and densely sprinkled fuscous on a testaceous ground; an irregular curved band from costa to Cu_2 at middle, and from this point to Cu_1 at apex, almost piceous; longitudinal veins castaneous, veinlets stramineous, those at apical margin sometimes with a greenish tinge.

♂. Anal segment of male moderately long, distally deflexed, apical margin truncate, in lateral view with lower margin not produced ventrad in a lobe at apex. Aedeagus tubular, U-shaped, a pair of long spinose processes arising laterally near middle, curved ventrad then cephalad, each process tapering distally, distinctly but not abruptly more rapidly narrowing a little before apex. Genital styles as figured.

♀. Anal segment of female in dorsal view sub-rhomboidal, twice as long as broad, lateral margins distad of level of anal style almost straight, converging to broadly rounded apical margin; margins moderately decurved ventrad.

♂. length, 3.7 mm.; tegmen, 3.4 mm.

♀. length, 4.0 mm.; tegmen, 4.0 mm.

Holotype ♂. CHILE: Coquimbo, El Panque, 1,400 m., 14.x.1957 (*G. Kuschel*).

Paratypes: 1 ♂ 2 ♀, same data.

This species is recognisable by the characters given in the key. Of the distinctive features, the near parallelity of the lateral margins of the frons is perhaps the most easily observed.

Sarnus rhomboidalis sp. n.

(Text-figs. 183-189)

♂ ♀. Vertex broader than long in middle line (6 : 1) ; frons almost as broad as long in middle line ; lateral margins weakly diverging in basal two-thirds ; median carina present only in second quarter from base. Tegmina with apical margin almost straight, oblique, subacutely and rather abruptly rounding into costal margin.

Fuscous ; discs of frons, pronotum and mesonotum densely speckled testaceous, carinae of pronotum and mesonotum, margins of legs and pleurites, testaceous-ochraceous. Tegmina translucent, fuscous ; veins castaneous, veinlets testaceous to stramineous, a subovoid area between $Sc + R$ and Cu_1 at level of $Sc + R$ fork, stramineous.

♂. Anal segment of male moderately long, distally deflexed, in lateral view narrow ; lower margins strongly produced ventrad in apical quarter in a bluntly rounded lobe. Pygofer rather short. Aedeagus tubular, U-shaped, a pair of spinose processes arising laterally near middle, directed ventrad then cephalad, each process abruptly narrowing a little before apex. Genital styles as figured.

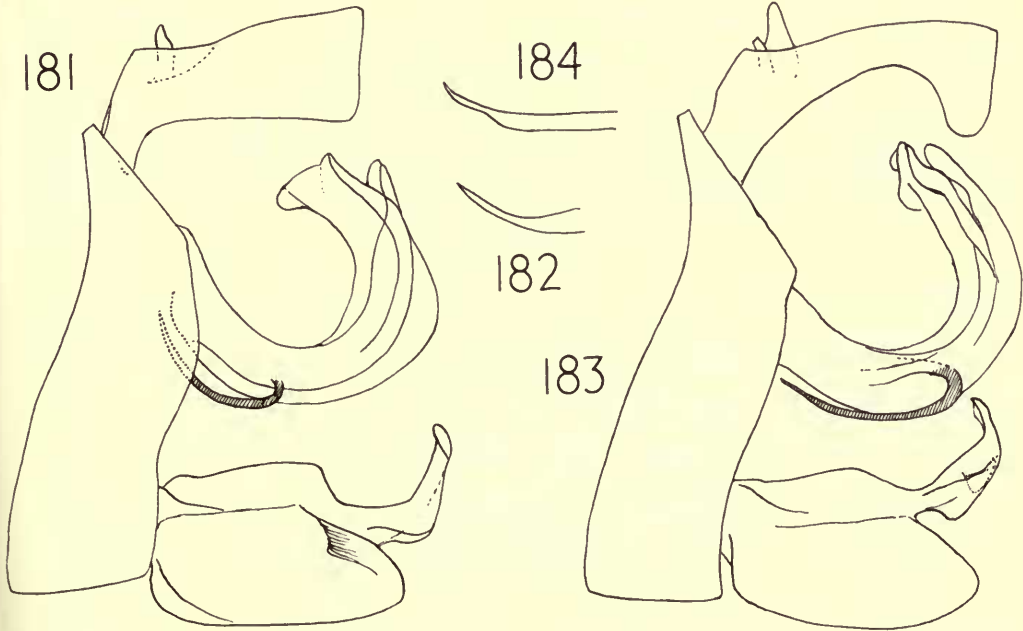
♀. Anal segment of female long, fully three times as long as broad at widest part, lateral margins distad of anal foramen almost straight, moderately converging distad, apical margin deeply rounded.

♂ : length, 3.5 mm. ; tegmen, 3.6 mm.

♀ : length, 3.8 mm. ; tegmen, 4.5 mm.

Holotype ♂. CHILE : Cuesta Zapata, Santiago, 30.xi.1947 (G. Kuschel).

Paratypes : 1 ♂, 4 ♀, same data.



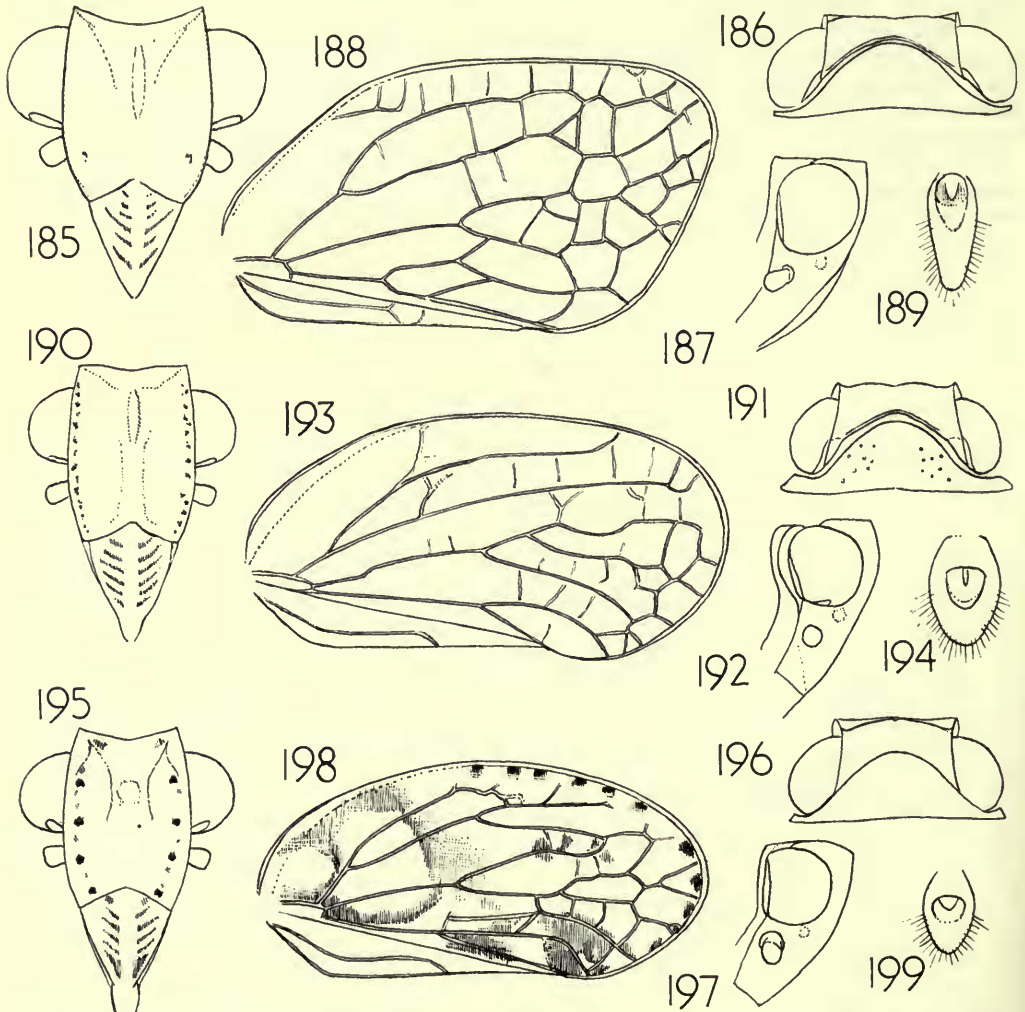
FIGS. 181-184. *Sarnus rectemarginatus* sp. n. 181, Male genitalia ; 182, apical portion of ventrolateral processes of aedeagus. *Sarnus rhomboidalis* sp. n. 183, Male genitalia ; 184, apical portion of ventrolateral processes of aedeagus.

This species is distinguished by the characters given in the key above, and by the structure of the male genitalia.

Sarnus gilvus sp. n.

(Text-figs. 195-199)

♀. Vertex broader than long in middle line (4.7 : 1), frons in middle line longer than broad (1.1 : 1), slightly wider at base than at apex, lateral margins weakly convex, median carina more or less distinct on basal half of frons. Tegmina with apical margin convex, broadly rounding into costal margin.



FIGS. 185-199. *Sarnus rhomboidalis* sp. n. 185, Frons and clypeus; 186, vertex and pronotum; 187, head in profile; 188, tegmen; 189, anal segment of female, posterior view; *Sarnus rectemarginatus* sp. n. 190, Frons and clypeus; 191, vertex and pronotum; 192, head in profile; 193, tegmen; 194, anal segment of female, posterior view; *Sarnus gilvus* sp. n. 195, Frons and clypeus; 196, vertex and pronotum; 197, head in profile; 198, tegmen; 199, anal segment of female, posterior view.

Stramineous; a row of four to eleven small spots on each side of frontal disc submarginally. a sprinkling of spots distally at middle and basally at lateral angles, two rows of small spots in anterior half of pronotum, and a round spot on each side of median carina at base, lateral lobes sometimes, a linear mark on each side of median carina of mesonotum, two linear markings on each side of clypeus, rostrum apically, two diffuse transverse bands on pro- and mesofemora, one on pro- and mesotibiae, fourth to sixth abdominal terga, except medially, and about six small spots on each corresponding ventrite, piceous. Tegmina translucent, stramineous, a series of about ten sublinear spots along costal margin and a small spot in each apical areole, a diffuse broad band from costa at one third from base to clavus at apex, and longitudinal veins in their middle portion, dark fuscous; veins in an ovate area in basal third of corium, and in clavus, concolorous with ground.

Anal segment of female in dorsal view ovate, less than twice as long as broad, lateral margins distad of level of anal style convex, decurved ventrad.

♀: length, 3.0 mm.; tegmen, 4.0 mm.

Holotype ♀. CHILE: Carrizal Bajo, playa, 10.x.1957.

Paratype: 1 ♀, same data.

In the type specimen the lateral lobes of the pronotum are pale; in the more heavily marked paratype they are mostly piceous. This species is distinguished by its general pale ground colour, and by the evenly arcuate shape of the lateral margins of the frons.

NUBITHIA Stål

Nubithia Stål, 1859a: 323. Haplotype, *Nubithia grisescens* Stål, 1859a: 323.

Nubithia gayi (Spinola) comb. n.

Issus gayi Spinola, 1852a: 263.

It is possible that *N. chilensis* Melichar (1906: 177) will prove to be the same as this species, but until the types can be examined the relationship cannot be decided with certainty.

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